Food & Beverage

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NUTRITIONAL GUIDELINES

Energy is defined as the capacity for doing work. From sunlight plants store energy as carbohydrate with the help of chlorophyll. Animals and men avail their energy through foods. When food is metabolised in the body, energy is released. Body requires this energy for all its activities. For all muscular activities and for the function of vital organs like heart, lungs, alimentary canal, nervous tissues and glandular tissues energy is required.

MEANS OF ENERGY

The energy requirement of a person depends on various factors. The most important factor in assessing the energy requirement is the basal metabolic rate of the person.

Basal Metabolic Rate (BMR) : This is defined as the amount of heat or energy required by the body to do the involuntary work of the body. Functions of brain, heart, liver, kidneys, lungs, secretary activities of the glands and intestinal movements are the basal activities in our body.

Factors Affecting the BMR : Basal metabolic rate of a person depends on the size, shape, composition, body weight, age and physiological condition of the person. Nutritional status

and endocrine system of the body also exert their influence on basal metabolic rate of a person. Climatic condition of the surroundings also affects the basal metabolic rate.

1. *Size:* Since the heat loss in body is proportional to the skin surface, a tall and thin person has greater surface and thus higher basal metabolic rate compared to the short person. The body composition shows variations in energy use. With little fat deposition in the body the basal metabolic rate increases and thus a tall, thin person has higher rates of basal metabolism compared to a short, fat man. Constant muscular activities of an athlete demand about 5 per cent more basal metabolic rate.
2. *Sex:* Sex also makes a variation in energy requirement. The metabolic rate of women is 6-10 per cent lower than that of men.
3. *Growth Period:* During the growth period the basal metabolic rate and thus the energy requirement are increased. The highest BMR is during the first two years. After the growth period, especially after 25 years of age, there is a decline in energy requirement.
4. *Endocrine Glands:* The thyroid gland exerts influence over energy requirements. Thyroid hyperactivity will speed up basal metabolism. The pituitary gland also increases the metabolic fate if it has disturbance. Adrenaline increases the BMR.
5. *Nutritional Status:* During undernourishment the basal metabolic rate also declines to an extent of thirty per cent.
6. *Pregnancy Condition:* During pregnancy and lactation the basal metabolic rate is increased by about 5 per cent during the first and second trimester and 12 per cent during the third trimester.

7. *Sleep:* During sleep the BMR is less than in the waking state.
8. *Climate:* Climatic conditions of the environment also affect the energy requirement. If the temperature falls below 14°C the energy requirement increases.
9. *Body Temperature:* Fever increases the BMR.
10. *Disease Conditions :* Diseases like typhoid fever, medullary diseases and lymphatic leukaemia show an increase in the BMR.
11. *Physical Activities:* Physical activities half an hour before BMR measurement show high rates of BMR.

Total energy requirement of 4 person varies according to the basal metabolic rate, effect of food, activity involved, age, sex, physiological conditions and climatic conditions of the surroundings.

Energy requirements of an adult in India was reviewed by ‘The Expert Group’ of the FAO/WHO in terms of a reference man and reference woman. The reference man is in the age group of 20-39 years, with a weight of 55 kgs, without any disease and with a capacity to perform 8 hours of moderate activity. When not engaged in work a reference man spends 8 hours in bed and 4-6 hours in moving around or in a sitting position and 2 hours either walking or doing household activities.

In the case of a reference woman, the difference is only in her body weight that is, as against 55 kg of a man she weighs 45 kg. Instead of the physical activity of the occupation, the woman does household duties. Other conditions are the same in the case of a reference woman.

The energy expenditure for man and woman is calculated considering their internal and external activities. The FAO/WHO expert group (1983) suggested some recommendations as given in Table.

Energy Allowance for Various Groups

Category	***Reference body weight***	***Activity***	***Energy allowance kcals.***
Man	55 kg	light	2400
		moderate	2800
		heavy	3900
Woman	45 kg	light	1900
		moderate	2200
		heavy	3000
	Pregnancy	2nd and 3rd trimester	+300
	Lactation	first six months	+550
		6-12 months	+400

Additional requirement of energy is needed for the growth of the foetus, placenta and maternal tissues during pregnancy.

The BMR is also increased due to increased internal activities. Daily 150 kcals during the first trimester and 300 kcals during the rest of pregnancy is recommended.

The energy cost during the term of pregnancy is 62,500 kcals. Additional energy requirement during lactation is for the secretion of milk. For a normal output of 850 ml of milk during the first 6 months 550 kcals/day is recommended.

During infancy the energy requirement is high. For 0-3 months 120 kcalsAg, 3-5 months 115 kcals/kg, 6-8 months 110 kcal/kg, 9-11 months 105 kcal/kg and at one year 112 kcals are recommended.

For children, the energy requirement varies according to their body weight The ideal weight of the children according to their age must be considered for assessing energy requirements.

Thus in the latest recommendations, some suggestions were made as shown in Table.

Energy Allowance for Children

	Age group	*Body weight*	*Energy allowance kg. kcal.*
Children	1-3 years	12.03 kg	1220 kcal
	4-6 years	18.87 kg	1720 kcal
	7-9 years	26.37 kg	2050 kcal
Boys	10-12 years	34.30 kg	2420 kcal
	13-15 years	47.03 kg	2660 kcal
	16-18 years	56.50 kg	2820 kcal
Girls	10-12 years	36.47 kg	2260 kcal
	13-15 years	45.53 kg	2300 kcal
	16-18 years	50.00 kg	2200 kcal

Specific Dynamic Action : Energy requirement is affected by the type of food ingested. The extra heat which is produced after taking food is known as the specific dynamic action (SDA). The stimulating effect of carbohydrates, fats and protein on energy metabolism is different. Protein foods produce the highest per cent increase in energy metabolism. The SDA of protein is about 30 per cent while carbohydrates and fats exert 6 per cent and 4 per cent, respectively. The average SDA of a mixed diet is about 8-10 percent.

The activities which demand maximum energy are in the following order:

> Walking very fast, severe exercises, running, swimming, sawing wood, labourer's work, carpentry, metal and industrial work, walking slowly, laundry work, typing and ironing.

Different Parameters

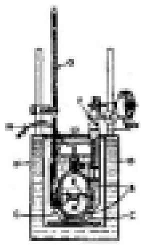
Energy is measured in terms of Kcalorie. A Kcalorie is defined as the amount of heat required to raise the temperature of 1 kilogramme (1 litre) of water by 1°C. But joule is the new

term used to measure energy. A joule is defined as the amount of work done or heal generated by an electric current of 1 ampere acting for 1 second against a resistance of 1 ohm. This unit is very small for measuring energy in nutrition and so 1 kilojoule (KJ) or megajoule (MJ) is used for practical use.

1 Kilojoule	=	1000 joules
1 Megajoule	=	10,00,000 joules
1 Calorie	=	4.184 joules (J)
1 Kcalorie	=	4.184 Kjoules
1,000 Calories	=	4.184 Mj (Megajoules)

Energy Value of Foods : Energy value of foods is otherwise known as the caloric value of foods. To measure the caloric value of food, an apparatus known as Bomb Calorimeter is used. In this apparatus a known amount of food is burnt and the rise in temperature of water in a container is recorded. The heat liberated by 1 gramme of carbohydrate is recorded as 4.1 kcals, protein 5.6 kcals and fat 9.4 kcals.

The energy value of food is otherwise known as the fuel value of foods. This is determined by means of an instrument known as Bomb calorimeter (Fig.).



Bomb Calorimeter

A weighed sample of dried food in pellet form is placed in a heavy steel container called a bomb. The bomb is held in place in a well insulated vessel. This is surrounded by a known volume of water.

The bomb is charged with oxygen to a pressure of about 300 pounds to the square inch. After the temperature of the water has been determined the sample is ignited by means of an electric fuse. The heat from the sample is dissipated into the water. By noting the change in the temperature of the water the energy value of the food can be calculated.

Physiological Fuel Value of Foods : Small losses occur in digestion when carbohydrates, fats and proteins are utilised by the body. Digestibility coefficiency of western diets are available and based on these data:

The physiological fuel value of carbohydrate	4 kcals
The physiological proteins	4 kcals
The physiological fats	9 kcals

Among these nutrients the body loses maximum energy from protein. This is due to the loss during digestion. The digestibility of various foods varies which affects the physiological fuel value. Among the various sources of energy, foods rich in fats and dairy produce are the best Dried fruits, cereals and other starchy foods and legumes are fair sources of energy.

Determination of Energy Requirements of the Body : There are two methods generally applied for measuring the energy requirements of human body. They are direct and indirect calorimetry methods.

Direct Calorimetry : In this method the amount of heat produced by the body is measured directly. At Water-Rosa, Benedict perfected the human respiration calorimeter. To measure the heat production in an individual a specially constructed chamber, called a respiration calorimeter, is used. It is determined through the relation between energy output and oxygen consumed in a person in this calorimeter.

Respiration calorimeter consists of an airtight copper chamber insulated by wooden wall with air spaces in between.

Enough provision for sitting or to lie down is made through a folding bed, chair and table. Food is provided through the opening at one end and the excreta is removed through another opening at the other end. The chamber is very well arranged for the individual to relax, read or write. It is insulated to prevent the entry and exit of heat through the walls.

The chamber is ventilated by a current of air, the CO_2 and water given off are removed by soda lime and sulphuric acid respectively. For oxygen supply, a known amount of oxygen is introduced to the chamber through a gas meter with an air current. The oxygen consumption and CO_2 production are calculated using a formula.

The heat produced is also measured by circulating a current of water through copper pipes and measuring the quantity of water that has been circulated through the chamber and also the difference between the temperature of the water entering and leaving the chamber.

Respiratory Quotient: Respiratory Quotient is the ratio between the volume of CO_2 given out and the volume of O_2 consumed by the human subjects.

$$\text{Respiratory Quotient (RQ)} - \frac{\text{Volume of } CO_2 \text{product}}{\text{Volume of } O_2 \text{ consumed}}$$

The RQ varies with the type of food being oxidised. When glucose is oxidised RQ is 1, for a fatty acid it is 0.7 and for protein it is 0.8. Under resting condition with no food for 12-14 hours the RQ is 0.82. In this condition carbohydrate, fats and protein present in the body are utilised.

Indirect Calorimetry : In this method oxygen consumed and carbon dioxide excreted in a given time under basal condition is measured. Many experiments on people of different ages have shown that 1 litre of oxygen is equal to 4.825 kcals when the person is in Basal Metabolic condition. The basal metabolic rate is measured by indirect calorimetry. The person has to

observe certain conditions before measuring the basal metabolic rate. They are:

1. In a post-absorptive state, *i.e.*, 12-16 hours after the last meal- preferably in the morning.
2. In a reclining state but awake.
3. Before the test the person must take one hour rest if he is engaged in any work.
4. Relaxed and free from emotional upset, excitement or fear.
5. Body temperature must be normal.
6. Room temperature must be comfortable.

In these favourable conditions the BMR is measured. For an adult man the BMR rate is 34.2-36.7 kcals/sqm/hr. and for an adult woman 30.9-35.1/kcals/sqm/hr.; for children it is more. For 7-8 year boys it is 49.1/kcals/sqm/hr. and for girls it is 45.2/kcals/sqm/hr.

DIET PLAN

Planning a balanced diet within the income level needs precise knowledge about the sources of nutrients, their requirements for various groups, seasonal availability of various foodstuffs and dietary habits of the group.

Blending these theoretical knowledge into a day's menu needs skill which has to be acquired through practice. There are certain basic principles which has to be observed while planning a balanced diet. As the name indicates a planned diet should be balanced. A diet is called balanced when all the nutrients required by the body are present in correct proportion. A judicious selection from the food groups will supply adequate nutrients for maintenance, repair and growth.

Other factors to be considered are composition of the family and the physiological phases of family members, dietary habits of the family, food budget of the family, variety in meal

patterns, appearance, texture and taste of meals, selection of food for seasons (cold and hot climate condition) and nutritional balance.

While planning a diet, the composition of the family has to be considered. Infants, children, teenagers, pregnant and lactating mothers and geriaric people need food in different amounts. There are variation in their nutritional requirements and their digestive capacity. Quality and quantity and often the preparation need certain changes. A careful planning gives provisions for all these without making great changes in the preparation pattern of foods.

Dietary habits of the family also have to be considered while meal planning. Food habits are influenced by earlier experiences in life: sensory, aesthetic, economic, geographic, social and cultural factors. Often food habits change according to the new environment, new values and availability of items. When a child is exposed to group feeding practices slight changes in likes and dislikes of foods are common. Age and sex also influence food choices.

The best example is an adolescent's dietary habits. There are vegetarian, non-vegetarian, lacto-aro-vegetarian and pesco-vegetarian dietary habits (plant foods and fish but no milk, egg, meat or poultry).

Food budget is a very important factor in meal planning. Money available to buy food items, time available for food preparation, job pattern, life-style of the family members, location of residence, and family values decide how much has to be spent on food. First of all to reduce food expenditure, one must have an idea about low cost nourishing foods for selection. Intelligent selection, good marketing, just enough bulk purchase, seasonal buying, food processing and preservation, better food preparation methods, avoiding more indulgence in ready-to-eat foods, fast foods, readymade food and hotel catering reduce food budget.

Variety in meal makes eating a pleasure. The same meal, if repeated, creates monotonous taste and reduces appetite. Variety in choice of food items, methods of preparation in colour, texture and flavour induce appetite and provide satiety value to the meal. When food is prepared in a proper form with characteristic taste and flavour, it derives satiety value.

Above all these factors, a nutritional balance in each meal is essential. Successful meal planning principles suggest that each meal must be nutritionally balanced. One-third of the total nutrients must be in the lunch, one-third in the dinner and the remaining one-third in breakfast and teatime. Skipping a meal is not good. Many people often skip breakfast which is very bad as far as the body is concerned. Studies have showed that the performance of a person after mid-morning is very poor if they skip their breakfast

Based on these principles, if a diet is planned it will be a balanced one. The Indian Council of Medical Research has suggested the amounts of various food items to make a balanced diet for various groups.

Some Clues for Different Balanced Diet—Low Cost BD : Millets, cereals, roots and tubers, pulses and leafy vegetables can be included liberally. Cheap seasonal fruits and salad vegetables lend attraction and freshness to the diets. Balanced diets of middle income groups can include moderate amounts of protective and proteins-rich food. Milk, egg, fish and meat can be included in moderate amounts while pulses, nuts, fruits and other foods can be used in liberal amounts.

Balanced Diets for High Cost : In a high cost diet protect the foods and protein-rich foods can be included liberally. Wet surveys in India have shown that malnutrition is prevalent among high class people also. B vitamins and certain minerals are not included m enough quantities in their dietaries. Over-nutrition due to high consumption of milk, meat, fats, ghee and sweets are common.

The ultimate aim of consuming food is to maintain health. There is no single foodstuff which can contribute all the nutrients needed by the body. Only a judicious selection can provide all the nutrients in required amount. In order to select the sources of all nutrients and that also in correct proportion one must know about the basic principles of food selection. The nutritionists and food scientists all over the world have put in a lot of efforts to formulate certain guidelines in these matters. Basic food groups suitable to different countries were evolved by the nutritionists.

The US Department of Agriculture suggested a number of food group plans like the Basic-4 food group.

The Basic-7 Food Group and the Basic-11 Group Plan : The Nutrition Expert Group of L.C.M.R. (India) suggested a five-food group plan.

Based on their nutritive values foods are grouped into 11. They are:

1. Cereals and millets
2. Pulses (legumes)
3. Nuts and oil seeds
4. Vegetables
5. Fruits
6. Milk and milk products
7. Egg
8. Meat, fish and other fleshy foods
9. Fats and oils
10. Sugar and jaggery
11. Spices and condiments.

In India this classification has great significance.

Cereals and Millets : They supply the major portion of calories (70%), more than 50 per cent of B Vitamins. In a poor vegetarian diet cereals supply more than 70 per cent of protein.

Rice and wheat are abundantly used as staple cereals in the world. In India rice is used mainly in the diet of South India, whereas wheat is the main staple in all other parts.

The major millets used are jowar, ragi and bajra. Though they are cheaper they are superior in their mineral supply and protein content Ragi is a very good source of calcium.

Pulses and legumes are fair sources of proteins and they are good sources of B vitamins, especially thiamine and riboflavin. Quantitatively their protein content is high but qualitatively they are not as superior as animal proteins. But in an Indian diet cereals and pulses supplement mutually in their amino acid content and improve the quality of protein. Pulses and legumes are comparatively cheap sources of protein. Cowgram, horsegram, soyabean, dry field beans and dried peas are some of the cheap pulses.

Nuts and oilseeds are fair sources of protein. Coconut is a good source of energy. It has also fair sources of B vitamin. Vegetables are unique in their vitamins and mineral content. Vegetables are again grouped into yellow vegetables, leafy vegetables and as other vegetables. Yellow vegetables and leafy vegetables are rich sources of vitamin ‘A’ (carotene), calcium, iron, folic acid, riboflavin and vitamin ‘C. But the iron content in vegetables is comparatively poorly utilised by the body. Other vegetables are good sources of minerals like calcium, trace elements and vitamin ‘C.

Apart from these, vegetables have a high percentage of water in them. They contribute the alkaline ash and the bulk or cellulose to the body. Beetroot, carrot and ladyfinger are high in sodium content. Fruits, especially citrus fruits, are good sources of ascorbic acid. Some starchy fruits are rich in fructose and dextrose; yellow fruits contribute carotene, the provitamin A. Fruits as a group supply water and electrolytes like potassium. Most of the fruits are rich sources of potassium and poor sources of sodium. Dates, dry raisins, grapes, peaches, lime

and ripe papaya are very high in their potassium content Bananas are rich in starch content in the raw form and in sugar content in the ripe form.

Milk and milk products are the best sources of calcium and ribo-flavin and second to the meat groups in protein content. Except a iron and vitamin ‘C milk is good in all other nutrients. Milk products are high in biological value and milk cream is excellent in vitamin A.

Egg has biologically very good protein. Egg white is rich in protein and egg yolk is rich in fat, iron, sodium, potassium, calcium and magnesium. Vitamins like thiamine, riboflavin, vitamins A and D are also present in egg. It plays very many roles in cookery.

Meat, fish and other flesh foods rank first in protein content. They are also good sources of phosphorous, magnesium, iron, thiamine, niacin, B 6, and B 12. The biological value of meat protein is high. Fat is present in a good quantity in it.

Fats and oils contribute mainly calories and they are good sources of essential fatty acids and vitamins A and E.

Sugar and jaggery are the common sweetening agents in our diet. They are rich sources of carbohydrate.

Spices and condiments are necessary foodstuffs used for flavouring foods. Apart from these functions some of them contribute certain nutrients. Red chillies and coriander supply carotene; green chillies vitamin ‘C turmeric and tamarind iron; and garlic stimulates synthesis of certain vitamins.

Then food is classified into 11 groups for convenience in selection.

But in different countries different food group plans are followed by the nutritionists to formulate a balanced diet.

In India the nutrition expert group of ICMR suggested the five-food group plans.

They are given below:

	Group	***Nutrients***
1.	*Milk group*	
	This consists of milk and milk products and protein-rich foods like pulses, nuts, meat, fish and egg.	This group supplies proteins, minerals and vitamins.
2.	*Fruits and green leafy vegetables*	
	Fruits like papaya, orange, mango, Indian gooseberry, guava and green leafy vegetables like spinach, amaranthus, drumstick leaves.	Rice sources of vitamin 'C' vitamin A (carotene), minerals and roughage.
3.	*Other vegetables*	
	Peas, beans, drumsticks, ladyfingers, bringals, cucumber, bittergourd, ashgourd, plantain etc.	They are fair to good sources of minerals, vitamins and roughage and water content.
4.	*Cereals, roots and tubers*	
	Rice, wheat, maize, ragi corn, tapioca, potato, sweet potato, yam, colocacia etc.	Rich sources of starch, fair to good sources of proteins and B vitamins. In an Indian diet this group supplies about 75-80 per cent of calories and 50-60 per cent of proteins.
5.	*Fats and oils and pure carbohydrate foods*	
	Butter, ghee, vegetable oils, sugar, jaggery, honey, starch and egg powders, custard powders etc.	They are rich sources of energy, sential fatty acids, vitamins A and E and cholesterol.

When these food groups were suggested they were known as Basic groups. Basic-7 food group plan, Basic-4 food group plan, and Basic-11 food group plan of US Department of Agriculture was the first in these series.

Basic dietary pattern and daily food guides were suggested by different nutrition boards. In India the National Institute of

Nutrition of ICMR has done remarkable work in this field. Guidelines for a balanced diet, composition of balanced diet and balanced diet for different regions of India, viz., balanced diets for the eastern region, northern region, southern region and western region were suggested by the NIN and it was periodically revised based on their advanced research in this field.

Guidelines for low-cost balanced diets were prepared by them for a student of nutrition. In our Indian background this has great significance.

CHOOSING DIET

Most of us have to plan either our own or other people's diets if only to the extent of selecting from a hotel or cafe menu what they well eat.

The housewife has to plan meals for her family, the members of which may be of different ages and have very different likes and dislikes. Meals have to be planned for the school dining-room, the institutional canteen etc.

Everyone should therefore have some knowledge of the values of foods and of the factors that influence choice, recognizing that the more costly foods are not necessarily those of the highest nutritional value. Grapes, for example, contain only traces of vitamins compared with the amount present in an orange or cabbage.

During and since the war, the science of nutrition has been applied to home economics as never before and in 1952 the Ministry of Food (U.K.) published a Report on Domestic Food Consumption and Expenditure in which data are given on nutrients consumed by different sections of the community and the extent to which these satisfy nutritional needs.

In 1950, the *mean* intake of the chief vitamins per head of the population was as follows:

Vitamin A	3,536 i.u. (a)
Vitamin B_1	1.51 mg.
Riboflavin	1.69 mg.
Nicotinic acid	13.0 mg.
Vitamin C	84 mg. (a)
Vitamin D	172 i.u. (a)

Including Welfare Foods : Except for vitamin D which is definitely low and riboflavin which seldom reaches the estimated needs, all these are at the level of adequacy.

However, the mean figure is obtained by averaging some above and some below and that in the case of the vitamins of the B complex, all of which are near the requirement level, there must be as many individuals receiving less that this as there are consuming more.

There was not, in 1950, the marked difference between the intake of people in different income groups as was found by the pre-war survey. It has therefore been possible to make estimates of the food consumption of the whole population with regard to the supply of the principal nutrients.

Vitamin A	20.7	per cent obtained from vegetables
	17.4	per cent obtained from fats, milk and cheese
	14.5	per cent obtained from meat (incl. bacon)
	7.1	per cent obtained from eggs
Vitamin B_1	43.8	per cent obtained from bread and cereals
	22.7	per cent obtained from vegetables
	14.8	per cent obtained from meats
	12.5	per cent obtained from milk
Riboflavin	40.0	per cent obtained from milk and cheese
	17.6	per cent obtained from bread and cereals
	16.5	per cent obtained from meat
Nicotinic acid	34.8	per cent obtained from meat
	31.9	per cent obtained from bread and cereals
	20.1	per cent obtained from vegetables

Vitamin C	37.2	per cent obtained from potatoes
	33.0	per cent obtained from fruit
	10.0	per cent obtained from green vegetables
Vitamin D	36.0	per cent obtained from fats
	22.7	per cent obtained from fish

The report points out that after August 1950 when the extraction rate of national flour was lowered from 85 per cent to 81 per cent, there was a corresponding drop in vitamin B intake in all groups of the population. Since bread and cereals supply over 40 per cent of the vitamin $B_{1,}$ this change was to be expected.

Average figures are no guide to individual differences. Everyone can do something, by the application of a knowledge of food values, to improve his or her own food intake and can do so without in any way becoming a food-faddist. It should be a natural habit to choose the better food when several choices are presented and such good habits can be developed easily in children.

If a mother or a school matron has enough knowledge to provide children with a nutritious diet then they are likely to grow up liking the nutritious foods to which they have become accustomed. Habits about food tastes are very pronounced and it is sometimes difficult training children (or adults) to like something new.

We would like to study various ways in which meals can be improved by various additions.

One of the simplest breakfasts taken in Great Britain is toast with butter and marmalade, accompanied by tea, but many people add to this either porridge or a cereal with milk or a cooked dish such as bacon or fish, or fruit, sometimes raw, sometimes cooked; and some take coffee in stead of tea.

The accompanying table shows the effect of a number of different additions to what is taken as a 'basal' breakfast.

The Effects of Various Additions to a 'Basal' Breakfast

Basal breakfast		***Vit. A or equiv. in carotene i.u.***	***Vit. B_1*** **µg.**	***Ribo-flavin*** **µg.**	***Niacin*** **µg.**	***Vit. C*** **mg.**	***Vit. D*** **i.u.**
Toast (81 percent edtraction)	2. oz	—	98	34	660	—	—
Butter	¼ oz.	284	—	—	—	—	—
Milk	1 oz.	30	13	40	—	—	4
Tea							
Sugar	—	—	—	—	—	—	—
		314	111 =.111 mg.	74 =.074 mg.	660 =.66 mg.	—	4.3
Additions							
(1) 5 oz. milk for cereal or coffee	150	65	200	—	—	1.5	
(2) Cornflakes	2 oz.	—	—	—	—	—	—

Contd...

Basal breakfast		***Vit. A or equiv. in carotene i.u.***	***Vit. B_1* µg.**	***Ribo-flavin* µg.**	***Niacin* µg.**	***Vit. C* mg.**	***Vit. D* i.u.**
(3) Porridge	2 oz.	—	250	80	600	—	—
(4) Bemax	1 oz.	—	450	200	1,700	—	—
(5) I egg	2 oz.	500	74	340	—	—	3.4
(6) 2 x 2 oz. tomatoes	4oz.	500 Approx	80	40	400	20	—
(7) Rasher bacon	1 oz..	—	160	125	1,200	—	
(8) Herring	6 oz.	250	—	—	6,000	—	1,500
(9) Haddock	4 oz.	70	48	300	1,500	—	—
(10) Grape-fruit pulp	2 oz.	3	20	14	100	12	—
(11) Stewed prunes	4 oz.	300-400	32	68	—	1	—

The same kind of analysis can be made of the snacks obtainable at nearly every snack bar :

Basal breakfast		***Vit. A or equiv. in carotene* i.u.**	***Vit. B*$_1$ µg.**	***Ribo-flavin* µg.**	***Niacin* µg.**	***Vit. C* mg.**	***Vit. D* i.u.**
1. *Baked beans on toast*							
Baked beans	3 oz.	70	60	30	600	—	—
Nat. bread	1 oz.			49	17	330	
Margarine	1/8 oz.	71	—	—	—	—	7
		141	109	47	930	—	7
2. *Spaghetti on toast*							
Spaghetti (uncooked)	1 oz.	—	20	—	600	—	—
Nat. bread	1 oz.	—	49	17	330	—	—
Margarine	1/8 oz.	71	—	—	—	—	7
		71	69	17	930	—	7

Contd...

Basal breakfast		***Vit. A or equiv. in carotene i.u.***	***Vit. B_1* µg.**	***Ribo-flavin* µg.**	***Niacin* µg.**	***Vit. C* mg.**	***Vit. D* i.u.**
3. *Sardines on toast*							
Sardines	2 oz.	150	20	160	1,300	—	560
Nat. bread	1 oz.	—	49	17	330	—	—
Margarine	1/8 oz	71	—	—	—	—	7
	221	69	177	1,630	—	567	
4. *Grilled tomato on toast*							
Tomatoes	3 oz.	420	60	30	300	6	—
Nat. bread	1 oz.	—	49	17	330	—	—
Margarine	1/8 oz	71	—	—	—	—	7
		491	109	47	630	6	7

Contd...

Basal breakfast		***Vit. A or equiv. in carotene i.u.***	***Vit. B_1* µg.**	***Ribo-flavin* µg.**	***Niacin* µg.**	***Vit. C* mg.**	***Vit. D* i.u.**
5. *Welsh rarebit*							
Cheese	1 oz.	369	9	140	100	—	4
Nat. bread	1 oz.	—	49	17	330	—	—
Margarine	1/8	71	—	—	—	—	7
		440	58	157	430	—	11
6. *Poached egg on toast*							
1 egg	2 oz.	500	74	340	—	—	34
Nat. bread	1 oz.	—	49	17	330	—	—
Margarine	1/8	71	—	—	—	—	7
		571	123	357	330	—	41

The value as carotene is halved to give an approximate equivalent in terms of i.u. vitamin A.

It is worth nothing that all of these (except tomatoes) are completely lacking in vitamin C, that sardines make the only appreciable vitamin D contribution and provide the only large quantity of niacin and that, except for numbers 3 and 6, not one contains as much as one-tenth of the day's requirement of vitamins of the B complex.

While these meals are useful, people consuming them regularly must remember to make up for these defects at other meals. It is sometimes assumed that any fruit will supply vitamin C. This is erroneous as can be seen by reference to the table of fruit contents and it is worth repeating the values of a few. One orange with about 3 oz. of edible pulp will yield 45-50 mg. One apple with about 3 oz. of edible portion yields only 10-15 mg.

the same weight of raw cherries
grapes about } 3 mg.
pear

Fruit drinks taken with a snack lunch supply vitamin C only if they do, in fact, contain the juice of the fruit. Some brands do and it is worth examining the label on the bottle. Some drinks, *e.g.* Ribena and Rosena have a declared vitamin-C potency.

An attempt was made during the war years to popularize the salad lunch, based on the Oslo breakfast of Norway and this met with a measure of success although the general preference in Great Britain is still for 'meat and two veg.' However, the following example illustrates the value of the salad meal especially when it is combined with such highly protective foods as egg, cheese and one or other of the fat fish.

The value of these cold salad foods can be turned to practical use in the preparation of picnic meals and sandwiches of which a few examples cab be given. From these examples it will be clear that certain foods are mentioned over and over again. These are the ones with a high vitamin content which should find a place in the diet of everyone.

Typical salad lunch	***Amount o.z.***	***Vit. A or equiv. in carotene i.u.***	***Vit. B_1 µg.***	***Ribo-flavin µg.***	***Niacin µg.***	***Vit. C mg.***	***Vit D i.u.***
Canned salmon	4	280	40	240	7,200	—	680
Hard-boiled egg	1	225	18	85	—	—	8.5
Cheese	1/3	123	3	47	33	—	1
Lettuce	1	363*	17	20	100	3	—
Tomato	2	140*	40	20	200	14	—
Beetroot	1	—	5	20	30	1.7	—
Wholemeal bread	2	-180	100	1,200	—	—	
Butter	¼	281	—	—	—	—	4.25
Orange	3	21*	60	30	300	48	—
Coffee (= Milk)	5	150	60	180		1	1.5
		1,583 i.u.	423 µg. = .423 mg.	742 µg. = .742 mg.	9,063 µg. = 9.063 mg.	67.7 mg.	695.25 i.u.
Proportion of day's approx. needs		½	1/3	½-½	3/4	all	all

Sandwich Fillings of Good Vitamin Content

	A	***B_1***	***Ribo-flavin***	***Niacin***	***C***	***D***	***E***
Grated cheese with lettuce & tomato	x		x		x		
Grated cheese with black currant jam	x		x		x		
Grated cheese with Marmite & watercress	x		x	x	x		
Grated cheese with Bemax & tomato	x	x	x	x	x	x	x
Buttered egg with parsley	x		x	x			x
Buttered egg with tomato	x	x	x		x		x
Buttered egg with lettuce & Bemax	x	x	x	x	x	x	x
Sardine with lettuce	x		x	x		x	
Salmon with tomato	x		x	x	x	x	
Ham with black currant jam.		x		x	x		
Ham with grated carrot & lettuce		x	x		x	x	

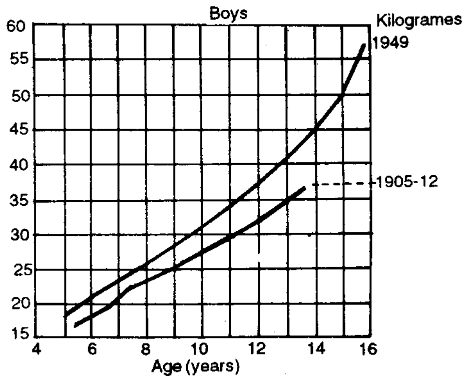
No hard and fast rules need be made about what must be included in the day's meals and what is better omitted but the examples given show how a knowledge of vitamin values can be applied to the planning of diets for a single individual or for groups of any size.

If vitamin values are forgotten it is easy to omit essentials, but the necessary information is available and no one today need eat a poor diet through ignorance. It is one function of teachers and others who have an opportunity to influence the tastes and habits of the population in dietary matters, to make sure that proper guidance is given on this subject.

The science of nutrition is a development of the present century. This has been a period during which there have been many advances in science and in medicine advances which are so closely interconnected that it is difficult to distinguish the effects of one alone.

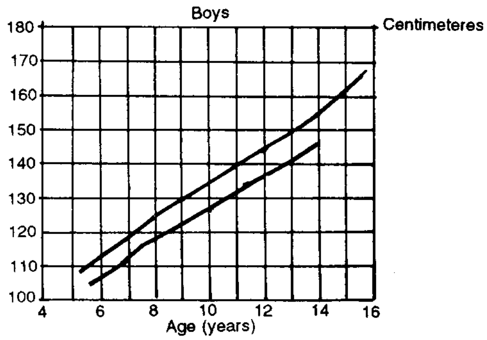
There are, however, certain pointers indicating where nutrition has played a part.

The effect of improved diet on the heights and weights of boys at school can be compared with the increases in height and weight of London schoolboys during the half-century.



County of London. Average weights of London school children for the years 1905-12 and 1949.

Other effects known to be because of nutritional factors are the fall in the incidence of rickets and in the death rate of children from this cause.



County of London. Average heights of London school children for the years 1905-12 and 1949.

Another improvement for which a better knowledge of nutrition is responsible is the reduced occurrence of complications of pregnancy, particularly the form of illness called toxaemia. Now this is partly due to improved nutrition because during 1940-42 the addition of various vitamins and minerals to the intake of over, 2, 000 pregnant women was tried out and the effects noted. It was found that the number of cases of toxaemia was reduced one-third.

The practice of giving extra vitamins has become more general and is no doubt one reason among others for the increased safety of motherhood today.

We now know something of the chemistry of vitamins, we can detect and measure their concentration with a fair degree of accuracy; some have been synthesized. We know something of their action in the body and of the effects of introducing into it, either by mouth or by injection, quantities far in excess of what could be taken in any food and this has led to the use of vitamins in massive doses in the treatment of disease. But there are still gaps in our knowledge, gaps which are gradually being filled as one discovery after another is made.

Chemists and biologists continue to work on obscure problems connected with the behaviour of vitamins. Isolated results of their works may seem sometimes to be of little importance. It is only when a result obtained in one laboratory is linked with another discovery made somewhere else that ultimately a fact of practical value to ordinary people emerges.

Such knowledge has wide applications. It influences agricultural policy, international economics, the world supply of food. These are problems too vast and complicated, but every individual can learn enough to be able to select the most nutritious food from what is available and to play a part in influencing public opinion in favour of producing and eating the foods which are best for nutrition and health.

Role of Proteins

In 1838, a Dutch scientist, Mulder, suggested the name 'Protein' is complex nitrogen-bearing substance in tissues. The word 'protein' is derived from the Greek work 'proieot' meaning to take the first place. Proteins play a significant role in all activities of living organisms. Due to the multiplicity of their functions the name given to them is very apt. In our skin, muscles, skeleton and in body fluids protein is present. They are essential during growth because it is the main constituent in out tissues. In a person's life the first eighteen months are very important as eighty pet cent of the brain development is over by this time. If protein is not sufficient during this time menial retardation takes place. Acute shortage of protein in early months of life brings intellectual dwarfism and it remains so for the rest of the life. That is why this nutrient is called 'protein'.

Importance of Diet

Proteins are complex organic compounds which contain carbon, hydrogen, oxygen, nitrogen, sulphur and phosphorus. Certain proteins contain iron, iodine, copper and other inorganic

elements. The presence of nitrogen distinguishes protein from carbohydrate and fat. Protein contains an average of 16 per cent nitrogen.

On hydrolysis large molecules of protein give out smaller units called amino acids. Amino acids contain a drboxyl group (CuoH) and an amino group (NH.) They are otherwise known as die acidic and basic group, respectively. There are twenty-three amino acids in proteins.

Amino acids are grouped into five groups based on the number of amino groups and carbosyl group in them. They are amino-monocarboxylic acids, monoamino-dicatboylic acids, dianino-moftocarboxylic acids, sulphur containing amino acids and aromatic and hetezocyclic amino acids.

1. Monoamimo-monocarboxylic acid.

   e.g., Glycine, Alanine, Viliae, Leuciw,

2. Monoamino-dicarboxylic acids

   e.g., As paartic acid, Glutamitic acid.

3. Diamino-monocarboxylic acid

   e.g., Arginine, Lysine

4. Sulphur containing amino acids

   e.g., Cystine, Cysteine, Methionine

5. Aromatic and heterocyclic amino acids

   e.g., Phenylalanine, Histidine, Tyrosine, Tryptophan, Proline, Hydroxyproline

A protein contains a number of amino acids. Two amino acids are linked together through peptide linkage. In this, the basic group of one amino acids combines with the carboiyl or acidic group of another group of amino acids. Two amino acids are linked together to form a dipeptide and it combines with another amino acid. When a number of adds are linked together it is known as polypeptide.

Classification : Proteins are biochemically classified into three groups based on their chemical composition. They are simple proteins, conjugated proteins and derived proteins.

Simple Proteins : On hydrolysis simple proteins give nothing but only amino acids. Such proteins are called simple proteins. Examples of simple proteins ate albumins, globulins and glutelins.

Prolamins, fibrous protein, histamins and protamins.

Albumins and globulins are found within all body cells and in the blood serum. Potatoes and peanut also have globulin in them. Globulin is in haemoglobin and myoglobin.

Glutelin is present in wheat glutens, zein in corn and gliadin in wheat has prolamine.

Collagen, keratin and elastin have fibrous proteins and histones are present in thymus and in globin. Protamins is present in salmine from salmon sperm.

Conjugated Proteins : On hydrolysis conjugated proteins give a protein fraction and a non-protein fraction. In our body conjugated proteins are present in various parts. Examples of conjugated proteins are haemoglobin, nucleoprotein, glycoprotein and lecithoprotein. Nucleoproteins are present in nucleus, glycoproteins in mucin and lecithoprotein in lecithin.

Derived Proteins : Derived proteins are derived from a mother protein either through hydrolysis or digestion. On digestion derived proteins are formed. Examples of derived proteins are metaproteins, coagulated proteins, peptides and peptones.

Metaproteins are products resulting from the action of acids or alkalies.

Coagulated Proteins : By the action of heat on protein or by the action of alcohol on proteins it coagulates. Cooked egg is an example.

Peptides, Proteoses and Peptones : Peptide linkage forms peptides from amino acids. Two amino acids linkage forms

dipeptide and three amino acid tripeptides. Digested proteins form peptides.

Proteoses are derived from proteins by the action of digestive enzyme pepsin and precipitated by saturating their solution with ammonium sulphate.

Proteins are again classified based on their nutritive value. From the nutritional standpoint amino acids are of two types, essential and non-essential. Essential amino acids are termed essential because the body requires them through our daily food. Non-essential amino acids are also essential to the body but the body can manufacture them from the available chemicals. Thus, the nutritional quality of a protein is based on the presence of essential amino acids in them. There are eight essential amino acids in the case of adults and ten essential amino acids in the case of children and others are non-essential amino acids.

The essential amino acids are isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine. For infants and children arginine and histidine are also essential.

Distance : The non-essential acids are alanine, aspartic acid, cystine, cysteine, glutamic acid, glycere, hydroxyproline, proline, serine, tyrosine, citrulline and norleucine.

Proteins *at* classified into complete proteins, partially incomplete proteins and incomplete proteins based on the presence of essential amino acids in them. The presence of amino acids helps a protein to perform all the functions of proteins in our body. A complete protein food contains all essential amino acids in proper proportion. It helps the protein to promote growth, maintenance and repair: Examples of complete protein foods are milk, egg and fish.

Partially incomplete proteins lack some essential amino acids and so they will help to maintain our body but growth is not promoted. Vegetable proteins are examples of this group.

Incomplete proteins neither help maintenance nor growth. Gelatin is an example of this type of protein.

There are certain methods to evaluate the quality of a protein. Biological value of protein and growth gain or protein efficiency ratio (PER) are the important methods used for this.

Biological Value : Biological value of protein foods depends to a great extent on their amino acid composition and they are grouped as protein of low or high biological value. The biological value of protein also depends on the digestibility of a protein food. Cooking enables the digestibility whereas overheating and frying reduces the biological value of a protein because it destroys the essential amino acid, lysine. Egg, milk, fish, poultry and meat are of high biological value whereas proteins from cereals like wheat, rice, pulses and nuts are of low biological value.

Vegetable proteins are low in essential amino acid pattern, especially of lysine, tryptophan, methionine and threonine. When a mixture of proteins from different sources is consumed mutual supplementation takes place. For example, rice or wheat protein is low in lysine whereas pulse is rich in lysine and low in methionine. Rice is rich in methionine and a mutual supplementation results when rice and pulse are consumed together.

Protein Efficiency Ration (Growth Method): The ability of a protein to bring increase in weight or growth gain is considered on the efficiency of a protein or its nutritive quality. Nutritive value is expressed as growth per gram of protein consumed.

$$\text{Per} = \frac{\text{Gain in body weight (gm)}}{\text{Protein in take (gm)}}$$

IMPORTANT TASKS

Building Block : The most important function of protein is to supply amino acids to cells for the continuous replacement of cells throughout life. It is the most abundant organic compound

in our body. It is the building block of our body. From conception to growth at various levels, foetus, infant, child, and during pregnancy and lactation period protein is very essential.

In our body, tissues are not in a static position. Degradation and resynthesis of protein and other nitrogenous compounds always take place in our cells. Tissue proteins are broken down and new substances are continually synthesised in our body. Muscles and other tissues, bones, cartilage and trabecula contain fairly high percentage of proteins. Our hair, nails and skin also contain protein. All body fluids except bile and urine have protein in them.

Regulatory Functions : Different proteins perform highly specialised regulatory function in the body. Haemoglobin, which is the chief constituent of the red blood cells, carries oxygen to the tissues. Oxyhemoglobin and their alkaline salts permit oxygen to enter into the tissues and receive carbonic acid from the cells. This process helps the removal of 92-97 per cent of all carbon dioxide from the tissues. Plasma proteins, especially albumin and globulin, play an important role in regulating osmotic pressure and water balance within the body. When plasma proteins are decreased the water balance is upset and accumulation of fluids in the body takes place. Proteins enable the blood to maintain their slight alkalinity. Proteins function as buffers, thus helping various sites of chemical reaction to maintain its pH. Nucleo proteins contain the blueprint for the synthesis, of all body proteins.

Formation of Enzymes, Hormones and other Secretions : Proteins supply raw materials for the body to synthesise enzymes like trypsin and pepsin. Hormones like insulin and thyroxine are protein in nature. Digestive juices contain protein in them. Antibodies which give resistance power to the body are protein in nature. They are known as immune proteins.

Sources of Energy : Protein is generally considered as the building material of our body. But when the diet contains

insufficient carbohydrate and fat for fuel, proteins are used as a fuel by the body. Each gramme of protein yields four calories. But it is not a wise contribution because the nitrogen excretion increases along with the cost of the food.

Proteins form Part of Vital Compounds in Body : Nitrogenous compounds are present in certain substances of immunological and antigenic reactions. Examples of these are globulin of blood serum and chromatin in nucleus. Methionine, an amino acid, provides methyl groups for the formation of creatinine and choline. Tryptophan, an amino acid, is converted to niacin, a B-complex vitamin, in emergencies, Glutathione, a tripeptide of crystine, is present in small amounts in all our active tissues and this helps oxidation-reduction reactions. Histidine, an amino acid, is decarboxylised to histamine and it is a stimulator of gastric glands to secrete gastric juice.

It is also used as a dialator of capillaries. Threonine, another amino acid, acts as a lipotropic agent which prevents deposition of excess fat in the liver. Proteins also help the transport of drugs by binding them into protein molecules. Contractile proteins (myocin, actin) regulates muscle contraction.

Acts as a Binding Factor : Rational binding protein, lipo proteins, transferring and serum proteins are very essential to our body for transporting many chemical substances.

Process of Digestion

There is no protein-splitting enzyme in saliva and so in salivary digestion protein is not affected. Hydrolysis of protein begins in the stomach. Pepsin, the enzyme secreted by gastric glands in the stomach, breaks down proteins into proteoses and peptones. Milk proteins are first converted to casein by a special enzyme called rennin.

Casein combines with calcium to form calcium casemate. Pepsin converts this into peptones. All the peptide linkages are not broken by gastric digestion. Stronger enzymes of pancreatic

and intestinal juices complete the digestion of protein into peptones. Pancreatic juice contains trypsin and chymotrypsins. They hydrolyse peptones and proteoses into polypeptides. The final breakdown of all protein fractions to amino acids is brought about by erepsin secreted by intestinal mucosa.

Amino acids are absorbed by the small intestine and they are carried to the tissues or to the liver. A small amount, that is, about eleven per cent of the total protein is absorbed by the stomach, sixty per cent by the intestine and twenty-eight per cent by the colon. The absorbed amino acids reach the tissues where then metabolism takes place.

Metabolism Functions

In the tissues amino acids undergo breakdown and synthesis. They are also transaminised, doaminised or decarboxylated. The anabolic activities consist of a formation of new cells or the repair and maintenance of existing ones and secretion of various substances. If there is excess of amino acids after these anabolic activities, they will be either used for energy purpose or are converted to fat

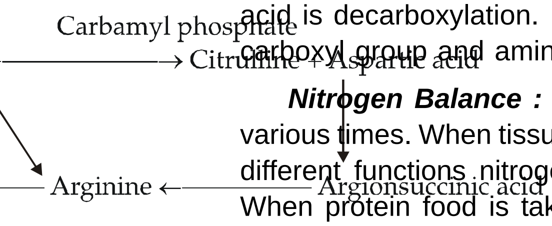
Deamination : One of the catabolic action is deamination. In deamination, the amino group is removed from an amino acid. This reduced amino group is used for the synthesis of new substances like simple amino acids or eliminated as urea. The carbon, hydrogen and oxygen may be used for carbohydrate or fat metabolism.

Transamination : The deaminated amino group may be utilised for transamination process. Transamination is a process whereby a new amino acid is formed using the deaminated amino group and another precursor. If all the amino group is not used for transamination, nitrogen freed from the amino group forms urea.

Formation of Urea : Amino acid is oxidised to ketoacids and ammonia. The ammonia, if it accumulates in the tissues,

is toxic. So in the liver ammonia is converted into urea and excreted as urine. Therefore, the end product of protein metabolism is urea.

Ammonia is converted into carbamyl phosphate. This reacts with ornithine to form citrulline. Citrulline combines with aspartic acid and forms arginosuccinic acid which is converted to arginine. Arginine is hydrolysed into ornithine and urea. This ornithine again combines with carbamyl phosphate and this cycle is repeated.



Urea Cycle

Another catabolic change which takes place in an amino acid is decarboxylation. In this carbon dioxide splits off from carboxyl group and amines.

Nitrogen Balance : Tissue proteins are broken down at various times. When tissue proteins are utilised by the body for different functions nitrogen is excreted in urine and faeces. When protein food is taken new tissue proteins are formed. Nitrogen balance is the difference between the amount of nitrogen taken in through the diet and the sum of nitrogen and nitrogenous substances excreted from the body.

When the nitrogen intake is more and the nitrogen loss is less the body is said to be in a positive nitrogen balance. When the nitrogen intake is less and nitrogen loss is more the body is said to be in a negative nitrogen balance. When the nitrogen intake equals the nitrogen lost from the body, the body is said to be in nitrogen equilibrium. During deficiency state the body shows a negative nitrogen balance.

Factors Affecting Protein Utilisation : If sufficient calories

are present in the diet, protein will be effectively used for its function. Certain minerals and vitamins are essential for the proper utilisation of protein. Potassium, phosphorus, vitamin A, riboflavin, niacin and vitamin B6 are the factors which enable the utilisation of proteins.

Heat treatment or processing improves the utilisation. Heat destroys inhibitors of certain enzymes and that is how it helps digestion. But if direct heat is applied to meat it retards protein utilisation. Examples of this action is roasting meat in direct heat or frying.

Requirement of Proteins : Determination of protein requirement is based upon the nitrogen expenditure pattern and the estimation of nitrogen intake. Assessing nitrogen intake or protein quality of a mixed or complex diet is difficult. Efficiency of a protein source is based on its amino acid patterns and milk and egg proteins have 100 per cent efficiency. This is used to compare the quality of other proteins.

Covering a 30 per cent addition to the variability of different proteins 1 gm of protein/kg body weight is recommended by FAO/ WHO expert group. Protein allowance during infancy and childhood is more as there is rapid growth. Studies have shown that well nourished pre-school children can attain heights and weights close to Western children. During pregnancy and lactation there is an increase in protein content. Protein requirement during various phases of life is given in table .

Protein Allowance

Man	1 gm/kg/day...55 gm (55 kg)
Woman	1 gm/kg/day...45 gm (45 kg)
Pregnancy	2nd, 3rd trimester 14 gin/day
Lactation	0-6 months + 25 gm/day
	0-3 months - 2.3 gm/kg (for milk protein)
	3-6 months -1.8 gm/kg
	6-9 months -1.8 gm/kg
	0-12 months -1.5 gm/kg

Children	1-3 years	-	1.83 gm/kg day	- 22 gm (12.03 kg)
	4-6 years	-	1.56 gm/kg	29 gm (18.87 kg)
	7-9 years	-	1.35 gm/kg	36 gm (26.37 kg)
Boys	10-12 years	-	1.24 gm/kg	43 gm (34.30 kg)
	13-15 years	-	1.10 gm/kg	52 gm (47.03 kg)
	16-18 years	-	0.94 gm/kg	53 gm (56.50 kg)
Girls	10-12 years	-	1.17 gm/kg	43 gm (36.47 kg)
	13-15 years	-	0.95 gm/kg	43 gm (45.53 kg)
	16-18 years	-	0.88 gm/kg	44 gm (50.00 kg)

Protein Deficiency : Deficiency of protein-predominant foods during growth period is known as kwashiorkor and protein-calorie malnutrition is known as 'marasmus'. Protein calorie malnutrition is one of the largest nutritional problems in India.

Kwashiorkor : Kwashiorkor is a term used by Ga tribe in Ghana and the meaning of this word is 'the sickness the old child gets when the next baby is born'. Dr. Cicely Williams in 1933 reported the occurrence of kwashiorkor (red baby) in poorer sections of population in Africa.

Internal and external changes occur in the structure and functional efficiency of various organs in the body. Starting from hair and skin to tissues, blood, water content in the cells, blood cells, organs like liver, alimentary canal and nervous tissues are affected by protein deficiency. The child will maintain an apathetic, anaemic, anorexic, ocdematous and diarrhoeic condition.

The early symptoms of kwashiorkor include loss of weight, fatigue, reduced resistance to infection, delay in recovery from illness and retarded growth. As the protein deficiency prolongs, changes in the body take place. Discolouration of the skin, oedema with ascites, peeling of skin, cracks in the skin, angular stomatitis, cheilosis and atrophy of the tongue and- anaemia occur.

Degeneration of the epithelial tissues and reduced secretions of digestive juices result in diarrhoea. Absorption of nutrients is delayed and result in general weakness and mental retardation.

Liver may be palpable and soft. Fatty liver, especially in the periphery, is seen.

Functions of liver are affected adversely, especially the synthesis of lipoprotein is reduced, hence fat accumulates in the liver. Deficiency of all vitamins occurs. Deficiency symptoms of B-complex vitamins lead to stomatitis and ulcers in the mouth and stomach, vitamin A deficiency leads tonight blindness and xerophthalmia, severe protein deficiency results in permanent retardation of mental development, psychomotor development and behaviour.

Marasmus : Marasmus is the result of starvation in children. Marasmus occurs when the diet is low in both calories and in protein. The term Marasmus is derived from the Greek word meaning ‘to waste. Tissues are wasted and unlike kwashiorkor the body looks shrunken.

The child has an emaciated look. Irritation, apathy, loss of appetite, dehydration, wasting of muscles and weight loss and incessant diarrhoea are the other symptoms of marasmus. All these result in retardation of growth and severe wasting of subcutaneous fat Deficiency of vitamins A and B complex is common in these patients.

Marasmic Kwashiorkor : This occurs when a combination of marasmus and kwashiorkor of varying degrees is present in a child. The child shows signs of both kwashiorkor and marasmus. Gastrointestinal and respiratory infection may accompany the other symptoms.

Significant Means

The best sources of protein are animal sources like meat, fish, poultry, eggs, milk and milk products. They are otherwise known as first class proteins because they are rich in essential amino acids.

Cereal grains and legumes are the important sources of plant proteins. They are also known as second class proteins.

Pulses are commonly knows as “poorman’s meat” because they are comparatively cheap and fair in the nutritive content. The biological value of vegetable proteins can be improved when cereals and pulses are taken together.

Mutual Supplementation of Amino Acids : Amino acid content of the diet can be improved by supplementing one protein source with the other. In Indian diet this method has a significant role to play.

For example, cereals and pulses. Lysine, the limiting amino acid in cereals, is supplemented by pulses, which is rich in it Methionine, the limiting amino acid in pulse, is supplemented by cereals. Soyabeans is also rich in lysine but deficient in methionine. A small quantity of animal foods can also do the same to vegetable proteins.

2

PRESENTATION PLAN

Planning : The question of what constitutes the best layout for a restaurant is a mixture of practicality, character and ambiance. Few traditional restaurant dining rooms are the same and most bear the stamp of individuality. Once again, the style of business done is a very decisive factor in the choice of finishings, fixtures fittings, lighting and so on. Basically however the needs are always same—a table to eat and a chair to sit on. Planning the seating capacity can be a very interesting exercise. While it should not be the aim to cram all the available space so that it is uncomfortable both for customers and staff, it is important to remember that to seating capacity is the pay-load. One should keep in mind that the kitchen should be able to cope.

Furniture : Furniture must be chosen according to the needs of the establishment. Very often by using different materials, designs and finish by careful arrangement one can change the atmosphere and appearance of the food service area to suit different occasions.

Wood is the most commonly used material in the dining room furniture. Although wood dominates it must be noted that

more metals, mainly aluminium and aluminium-plated steel or brass are gradually being introduced into the dining room furniture. Sunmica or plastic-coated table tops are found in many cafeterias or staff dining rooms. Plastic and fibres are now being used extensively to produce dining room chairs also.

General points which must be considered when purchasing equipment for a food and beverage service area are as follows :

(i) Flexibility of use

(ii) Type of service to be offered

(iii) Type of customers targeted

(iv) Design

(v) Colour

(vi) Durability

(vii) Stackability

(viii) Ease of maintenance

(ix) Cost and funds available

(x) Availability in the future-replacements

(xi) Storage

(xii) Rate of breakage

(xiii) Shape

(xiv) Psychological effect on the guests

(xv) Delivery time

Chairs : These come in an enormous range of designs, materials and colours to suit all situations and occasions. Because of the wide range and styles the chairs vary in height and width, but it is sufficient to say that as a guide—a chair seat which is 46 cm (18 in) from the ground, a minimum of 46 cms (18 in) wide, the height from the ground to the top of the back is one metre (39 in) and the depth from the front edge of the seat to the back of the chair is 46 cms (18 in) is suitable.

Tables : These come in three accepted shapes : round, square and rectangular. An establishment may have a mixture of shapes to give variety or tables of all one shape according to the shape of the room and the style of the service to be offered. Two tables may be joined for groups, parties, or extensions may be provided in order to cope with dinners, weddings etc. By using these extensions correctly a variety of shapes may be obtained allowing full use of the room and getting the maximum number of covers in the minimum space. The approximate space requiredper cover in a restaurant could be 15 sq. feet. Ideal sizes of tables may said to be :

(i) *Square :* 76 cm (2 ft. 6") to seat two people, 1 m (3 ft.) to seat four people.

(ii) *Round :* 1 m (3 ft.) in diameter to seat four people. 5 ft. in diameter to seat eight people.

(iii) *Rectangular :* 137 cms x 76 cms (4 ft. 6 in) x 2 ft. 6 inches to seat four people.

Approximate height of the table should be 30 inches.

Sideboards : The style and design of the sideboards would depend upon :

(i) The style of service and the menu offered.

(ii) The number of waiters or waitresses working from one sideboard.

(iii) The number of tables to be served from one sideboard.

(iv) The amount of equipment it is expected to hold.

Fabrics : Drapes, curtains and fabrics are added after the designer variations in texture, colour and shape to blend or contrast with the architectural features of the restaurant. Fabrics in restaurant decor give warmth and cosyness. Setting are used to control the restaurant atmosphere and the designer should consider the appreciation of atmosphere by appealing to the senses sight, touch, taste, smell and hearing.

Linen : The type of linen required would depend upon the class of establishment, type of clientele and cost involved as well as the style of menu and service to be of the restaurant.

China : This is an important aspect in the presentation of the table. The China must blend in with the rest of the items on the table and with the general decor of the establishment. When purchasing China the factors to be considered are as follows :

(i) Every item of earthenware should have a complete cover of glaze to ensure a reasonable length of life.

(ii) China should have a round edge in order to prevent chipping.

(iii) The design and pattern should be simple to match with the decor of the restaurant and type of cuisine served.

Generally the variety of china used are Bone china, hotel earthenware, stoneware and porcelain.

Glassware : It also contributes to the appearance of the table and the overall attraction of the room. Hotel glassware is usually plain except in certain establishments coloured or cut glassware may be used depending upon the budget.

Space Estimates : Accurate determination of the space requirements of a food service facility is a very difficult problem, involving reason and computation. The space required for each function and facility is dependent upon many factors which are not constant for all types of operations.

The factors involved includes the number of meals to be provided for the functions and tasks to be performed; the equipment requirement, the number of employees and the corresponding workplace required for storage materials and suitable space for traffic movement. Aa a rough guide one may keep in mind the following figure while estimating space requirement.

Estimated total facility space for food service facilities :

Types of operation	***Area per seat (sq. ft.)***
Table Service	12 to 15
Counter Service	18-20 (Including the counter)
Cafeteria Service	10 to 12

The square of space allowed in the dining areas is governed by the amount of comfort desired and the mood and atmosphere in the restaurant.

Lighting : The lighting scheme of a restaurant must not only make a good visual impression, it must supply enough light for the practical needs of clientele and staff. There is a trend towards a more sensitive use of lighting and an awareness of its effect on mood. It is generally assumed that lighting of reduced brightness creates "mood" and bright lights are harsh and stimulating. The lights which could be used are fluorescent, tungsten and coloured lights etc. Lamps with built-in reflectors could also be used. The daylight variations are considered when planning the lighting scheme.

Heating : No two people seem to agree about temperatures in public places. The temperatures desirable usually depend on the weather outside, whether it is raining or not and the type of activities that the customer has taken part in before his meal. No one wants to enter a restaurant after a long windy walk in winter and feel cold in a restaurant having no heating system. In defining the heating required to set a good atmosphere in popular restaurants one must consider the type of clothing generally worn by the clientele, and whether or not they are likely to be conditioned to central heating.

A log fire or radiant electric heater can form a good focal point in a decor scheme. Levels of temperatures and physical response are hard to analyse accurately. Colour in the decor affects the illusion of heat. As a general rule dark colours warm, and light colours brighten.

Air-conditioning : When a restaurant is at peak periods all problems can be overcome by air-conditioning. It's importance in relation to the atmosphere is obvious. It gives greater comfort to clientele and staff and keeps them happy and relaxed without the fatigue which overcomes people as soon as the room becomes overheated and airless.

Carpeting : It is now used extensively in speciality or popular restaurant. Dark carpets are preferred as they cover dirt. The guest comes into direct contact with the carpeting, feels more comfortable and enjoys the sensation of walking on a soft pliable surface.

Tiling : Tiles are being used in restaurants to give a new range of texture and colours to floors and walls. Unglazed tiles in earthenware colours form ideal floors for popular or continental restaurants where there is a busy atmosphere. Tiles are costly but they last a lifetime and the only real disadvantage is that the restaurant is committed to one type of floor or wall surface for the life of the building. Tiles are easy to clean, absorb no or little water. The tiles form a natural surface in the decoration of the restaurant and are practical as well as decorative.

Table-setting : It is an important aspect as the guest forms an impression of the restaurant from the quality and standard of cleanliness of cutlery, tablecloths, napkins, tableware, silverware, tablemats, menus, table lamps, ashtrays and glassware. Every item that is visible on the table or seen by the guest during the service of food must carry through the feeling which the designer wants to evoke from the guest.

Pictures and Prints : They are used to help in creating the restaurant theme. Murals or photomurals have for many years been popular as a restaurant decor, especially where there is no design theme or a room lacks any particular character but has long black walls.

Music : Music has a strong and instant effect on customer's mood. Any music for entertainment demands the guest's attention

and makes him react to the mood of the entertainer. Live music gives a sense of moment, an experience which is direct and personal.

Costume and Uniform : The dress of the staff can follow through the theme of the restaurant, add colour and interest, and play a part in creating the atmosphere.

Exterior design and Entrance : The exterior of a restaurant will form the second impression of the premises in a newcomer's mind. It should reflect the character of the locality and relate to it but also distinguish it from the other buildings in the street through its signs, lighting, the design and the colour of the shades, sunblinds, the windows, the view inside, curtains, flowers or plants and the door— which would be noticed by the customer on his first visit.

Advertising and Brochures : Brochures should be made in advance before opening and enough advertising should be done in the newspaper magazine, television, radio. This requires advance planning.

The varies positions in the Restaurant Brigade are referred to differently in the French, American and English hotel Industry. Such as :

	French	American	English
1.	Maitre D'hotel Reception	Senior Captain Reception	Head Waiter Reception
2.	Maitre D'hotel De Carre	Senior Captain Station	Head Waiter Station
3.	Chef De Rang	Captain	Station Head
4.	Demi Chef De Rang	Assistant Captain	Waiter
5.	Commis Debarasseur	Assistant Steward/ Bus Boy	Assistant Waiter
6.	Apprentis	Apprentice	Trainee

SUPPLYING PERSONNEL

There are countless duties that must be accomplished in any job and it is necessary for a manager to know the specific duties within the jobs he/she is supervising. Traditionally a manager was expected to be the best in a particular skill (job) before he/she was promoted to the supervisor position. Yet a good or excellent waiter does not necessarily make a good supervisor. An effective manager should be aware of standards, standard service procedures, the proper method of setting tables and serving various menu items.

The many tasks to be performed by the services personnel, captains, waiters may be divided so as to obtain maximum efficiency from service personnel both individually and collectively. Individual job descriptions must be designed specifically for a particular operation.

DESCRIPTION OF JOB

Managerial Skill and Responsibilities

1. Leadership
2. Employee Relationships
3. Employee Motivation
4. Oral Communication
5. Employee Training
6. Human Relations
7. Staff Coordination
8. Guest Relations
9. Short-Range Planning
10. Delegation of Responsibility
11. Goal-Orientation
12. Written Communication
13. Team Development

14. Problem-Solving
15. Staff Time Management

Operational Skills and Responsibilities

1. Cost Control
2. Food Merchandising
3. Employee Scheduling
4. Marketing
5. Business Forecasting
6. Menu Pricing/Planning
7. Financial Planning
8. Menu Design
9. Product Specifications
10. Accident Prevention and Safety
11. Discipline Maintenance
12. Employee Grievance Resolution
13. Interviewing
14. Personnel Evaluation and Appraisal of Executives
15. Cadres
16. In-Charge of Facility Design
17. Recruitment

Role of Banquet Captain

Position Pre-requisites : Must have basic knowledge about food and beverage; should have a minimum 2 years of experience as a Banquet Captain.

Purpose : To supervise the Banquet operations, set up break-down and service according to the standards establishments by the hotel. To coordinate the Banquet service in conjunction with other departments involved to make up weekly schedules for the Banquet personnel.

Duties and Responsibilities : Responsible for the service of all Banquet functions as well as outdoor caterings.

Supervision Exercised

Positions Directly Supervised : Banquet Service Personnel

Positions Indirectly Supervised : Engineering Staff, (Microphone, Light effects, spotlights etc.)

Reports to : Banquet Manager

Employee and Client Relation : Works directly with client as well as the banquet set-up and coordinates with the kitchen and beverage personnel.

Material or Products : Responsible for economic use of food, beverages and equipment.

Money Management : Banquet payroll and customer billing.

Duties : To supervise employees engaged in the performance of the Banquet Service according to Function Prospectus (FP) or Banquet Event Order (BEO) sent by the banquet sales office.

1. Sets up work schedules as required.
2. Reports daily to the Banquet Manager for evaluating functions, equipment needed and problems related to F & B service.
3. Holds pre-function meetings.
4. Maintains accurate inventories and records.
5. Carries out all reasonable jobs assignment or requests.

Job Description of Restaurant Manager : Basic Responsibilities: Responsible for directing and supervising all activities pertaining to employee relation, food production, sanitation, guest service and operating profits.

Responsible for meeting all budget goals, for meeting with clients and booking special catered events, supervising scheduling, delegating general management tasks to the assistant manager.

Specific Duties

1. Works out with departments head assistance the operating budgets.
2. Monitors budgets to control expense.
3. Serves as the restaurant's representative for all advertising/marketing activities. Supervises the schedule of the Restaurant personnel.
4. Responsible for promoting good employee and public relations.
5. Coordinates production and services programs as directed by and in accordance with company's policies and procedure and standards.
6. Meets with clients, plans and prices special catered events.
7. Conducts cost redirection and minimization studies.
8. Delegates miscellaneous administrative tasks to assistant managers.
9. Observes whether all service personnel are adhering to job descriptions, personal appearance, job efficiency and training.
10. Ensures coordination with kitchen personnel.
11. Responsible for ordering supplies, service ware and equipments.
12. Maintains various reports *i.e.* sales summary, cover count, guest check analysis.
13. Addresses employee grievances, time and personnel record.
14. He is responsible for maintaining proper procedure in ordering, receiving and storage of food.
15. Reports to F & B Manager.
16. Supervises the Assistant Restaurant Manager.

17. Take care equipment that are in bad shape.
18. Checks the working conditions in all areas of the restaurant. Long hours, standing and walking are routine components in the job.

ROLE OF ASSISTANT MANAGER

Assistant Manager should have a mind that is organized, alert and open to helping fellow employees as well as the employer.

(Job description same as Restaurant manager)

Job Description of Maitre D'hotel or Head Waiter

Job Profile : Greets guests, supervises and directs the efforts of captains, waiters/ waitress and his personnel. The Senior captain/Head waiter ensures that gracious service is given to all guests.

Work Responsibility : The senior captain is responsible for the service in the dining room, coordinating the kitchen and dining room staff and ensuring that proper service technique is being followed.

Specific Task

1. Supervision of captains, waiters, waitress and his personnel.
2. Assigns side duties to service personnel.
3. Takes guest reservations, handles details for private functions.
4. Schedules service personnel for duty, assigns service stations to service personnel.
5. Ensures that foodstock items are at proper levels.
6. Requisitions or procures linen, condiments, various supplies such as sugar, salt, pepper etc. and requisitions additional china, silver and glassware if required.

7. Informs the management, maintenance or housekeeping personnel of required actions, like paint touch-ups, carpet cleaning, faulty electrical systems, broken furnishing etc.
8. Supervises the set-up of the buffet table. Greets guest and escorts them to appropriate tables.
9. Handles guest complaints and makes suggestions to the guest for food or beverages.
10. Ensures that all closing duties are completed and that all tables are reset.
11. Dismisses Service Personnel.

Reports to : Restaurant Manager or his Assistant

Specific Considerations : The Senior Captain must remain cheerful and professional under the most adverse conditions or any difficult situation that may occur in the dinning room. The personality of the establishment rests with the senior captain.

Opening Checklist for Senior Captain

1. Record names and assign stations on dining room station assignments and duties sheet.
2. Check total reservation and tables that must be set or reset.
3. Check Function Prospectus (F.P) or BEO (Banquet Event Order) for private party settings and details.
4. Assign side duties on station assignment sheet to the service personnel and check that each is properly attired and in full uniform.
5. Requisition of all foodstock supplies.
6. Supervise table settings.
7. Check buffet table and salad bar.
8. Specify time for menu briefing.
9. Assign reservations to table.

10. Check windows (blinds, drapes) lights and air-conditioning.
11. Check for the proper number of clean linen and condition of drapes, menu cards etc.
12. When ready for services, open doors, begin seating the guest.
13. Check for courteous, prompt and correct service, water filled, butter/bread supplied, condiments available, proper services of all items and clearing away of unused and unnecessary silver, china or glassware, crumbed table. Check buffet for replenishment, appearance and heat.
14. As the guests leave, ensure guest checks are paid.
15. Bid guests farewell.
16. Supervise closing duties and release staff for break as required.

Job Description of Dining Room Captain

Job Profile : Provide proper services and coordinate the task of two or more service personnel and Assistant Steward or trainee or apprentice.

Work Responsibilities : The captain is responsible for gracious and proper services at two or more service stations. At a given time a particular station may seat 35-40 guests.

Specific Tasks

1. Greets the guest.
2. Ensures that waiter/waitress serve water as soon as the guests are seated.
3. Takes the guest order.
4. Serves the guest all courses in proper sequence.
5. Ensures that the service personnel keep soiled dishes and silverware properly and timely, as well as performs all of their duties properly.

6. Presents the check.
7. Ensures that the table is reset.
8. Bids guest farewell.

Reports to : Restaurant/Dinning Room Manager.

Special Considerations : The Captain must be efficient in waiter/waitress tasks and in directing the efforts of same.

Job Description of Steward/Waiter/Waitress

Job Profile : Includes preparing tables, setting the dining room counters, coffee shop or lunch room for service and serves meals to the guests. He/she must have knowledge of proper rules of etiquette in order to furnish working service in either a formal or informal sitting.

Work Responsibilities : The steward/waiter /waitress is responsible for gracious and proper services at his/her station. Each station seats approximately 15-20 guest.

Specific Tasks

1. Reports to Senior Captain/Captain to receive necessary instructions for the shift and for any menu charges.
2. Has to attend briefings conducted by senior captain.
3. Sets the assigned tables and ensure that the services area too is well-stocked with linen, silver, glassware, china etc. Sets up any special displays that may be used for the meal period.
4. Greets guests and sometimes assists the host/hostess in seating guest. Fills water glasses, serves butter, cocktails, answers questions about menu items and make suggestions about dishes and wine if the customer requests or desires.
5. Write orders on check, turns or gives order to the cooks with consideration to the timing of the preceding courses. Picks up all food and all other required items from various stations.

6. May carve meats, bone fish and prepare flaming dishes or desserts at guests table. He may assist Senior Captain for the same.
7. May serve guests from plates to the guest's table.
8. Other tasks to be performed as determined by establishment size and practices.
9. Replenishes wine, water, butter and bread as and when required.
10. Observes the guests in order to anticipate any additional request and to perceive when the meal has been completed.
11. After all the guests have finished each course and before the next one is served, the waiter/waitress should remove all soiled dishes or ensure that the assistant steward does.
12. When guests have finished the meal, the table is cleared and reset.
13. Performs other tasks as directed by the supervisor.

Reports to : Captain, Dining Room Manager.

Special Consideration : The waiter must be thoroughly familiar with the establishment's menu and all types of alcoholic beverage being served. He must know how to properly pronounce the names of continental preparations on the menu and what beverages complement them. He must have the correct knowledge of the method of serving meals of all kinds. The service time intervals between the meals must be regulated.

Waiter/Waitress Personal Equipments

1. Bottle opener/Cork Screw
2. Ball-point Pen
3. Matchbox/Lighter
4. Waiter's Cloth (Service Cloth)

Job Description—Assistant Steward

Job Profile : Assists waiters and waitress, maintains cleanliness and keeps the dining room supplied with clean service ware, china, glassware, condiments and ice, clears soiled dishes, removes them to the kitchen and resets tables.

Job Summary Responsibilities : The assistant steward is responsible for proper service, assisting from one to four waiters/ waitresses.

Specific Tasks

1. Assists waiter/waitress in their task.
2. Remove dishes from the dining room to the dishwasher in a kitchen.
3. Replenishes supply of clean linen, silverware, glassware and dishes in the dining room.
4. Replenishes butter supply for guests.
5. Fills, refills water glasses for guest.
6. Reset tables, replaces soiled tables and sets tables with silverware china and glassware.
7. Assists in carrying food salvers to the sideboard, side stand.
8. Dusts furniture and cleans and polishes glass shelves of the service bar and such equipment as coffee urns and creamer and milk dispensers.
9. Waits on and bring items to guests.
10. Transfers food and dishes and may be designated the dumbwaiter operator.

Reports to : Waiter/Waitress, Captain.

Special Considerations: The assistant steward must know the prescribed method for cleaning dishes, setting tables and cleaning the dining area.

Sample of the Job Breakdown of a Server

What to do	***How to do it***	***Additional Information***
1. Approach the Table	1. Stand erect greet the guest, and smile pleasantly. Introduce oneself. If their names are known, greet and address them by the names. Be courteous.	1. One wins the table with first contact when one pleasant and personable.
2. Take Cocktail Order	2. Ask if the guest would like a cocktail or wine. One must be sure to get the complete details of the order, such as on the rock or extra olives and remember who ordered what.	2. Most guest know which drink they prefer. One should be prepared to make suggestions if appropriate.
3. Serve Cocktails	3. A cocktail napkin is to be placed in front of each guest. All beverage served from the right with the right hand where ever possible. Cocktail glasses are placed on napkin. Do not ask who ordered what ? (As one is expected to remember the same)	3. Knowing who orders that one cares about the what shows order. Guests feel special when one repeats the order as one serve the drinks.
4. Take the Food Order	4. Ask the guest if they are ready to order. Explain the chef's speciality and answer any questions about the food. Be sure to inform the guest how much time, their order is likely to take. It is very important to communicate this.	4. One must not bluff the guest regarding description of menu items if one is not sure. Check back with the seniors regarding the same. Suggesting menu items help a hesitant guest make a decision.

Chef D'etage or Floor Waiter : The floor service staff are often responsible for a complete floor in an establishment or depending upon the size of the establishment or a number of rooms. Floor service of all meals and beverage throughout the day is normally offered by a first class establishment. In smaller establishments floor service may be limited to early morning tea

and breakfast with the provision of an in-room minibar, tea and coffee facilities.

If a full floor service is in operation the staff would consists of a head floor waiter with an appropriate number of floor waiters working for him/her. The staff are then responsible for the service of all meals and beverage in room. A thorough knowledge of food and drink, their correct good liaison and cooperation with the housekeeping staff cannot be overemphasized, rather it is a must.

Chef De Salle/Lounge Staff : Lounge staff deal with lounge service as a specific duty only in a Ist class establishment. In a smaller establishment it is usual for the members of staff to takeover these duties on a rotation basis.

The lounge staff are responsible for the service of morning coffee, afternoon tea, aperitifs and liqueurs before and after both lunch and dinner and any coffee required after meals. They are responsible for setting up the lounge in the morning and maintaining its cleanliness and presentation throughout the day.

The Sommelier is responsible for the service of all alcoholic drinks during the service of meals. The wine butler must also be a sales person. This employee should have a thorough knowledge of all drinks to be served, of the drinks that go with certain foods and the licensing laws in respect of particular establishments in the area.

Chef De Buffet : The buffet assistant is in-charge of the buffet in the room, its presentation, the carving and portioning of food and its service. This staff member could be a member of a kitchen team.

Commis Debarasseur : The debarasseur is a person who has just joined the food service staff, and possibly desires to take up food service as a career. During the service this person will keep the sideboard well-filled with equipment and may help

to fetch and carry items as required. The debarasseur would carry out certain amount of the cleaning during the pre-preparation period. The apprentice may be given the responsibility of looking after and serving hors d'oeuvre, cold sweets or assorted cheese from the appropriate trolleys.

Trancheur/Carver : The carver is responsible for the carving trolley and the carving of the joints at the table as required. The carver plates up each portion with the appropriate accompaniments. He should make sure that he does not spoil the preparation as the dish could look totally unappetizing.

Steward Functions and Different Types of Registers Used in Restaurants:

Cover Count Register: Used to keep an account of covers used in the restaurant at a certain period of time.

FORMAT

ABC hote :

Date :........................

Shift :

Serial No.	Table No.	No. of Covers	Time

Total Number of Covers
Total Sale of day
Average Sale/ Cover Total sale of the day

Log Book : It is a register kept with the hostess for personal and official messages.

Guest Complaint Book : It is used by the guests to make complaints about the restaurant. It is also known as the Visitor's Log Book, Guest Suggestion Book, Comment Book, Guest's Feedback Book.

Linen Exchange Register: It is used to keep an account of the linen's exchange for different restaurants in a hotel.

Linen Exchange Format

FORMAT

ABC hote Date ....

Name of Restaurant:

S.No.	Balance Brought Forward	Type of Linen	Dirty Linen to be Exchanged	Clean Linen Balance Received

Signature of Linen Keeper :

Signature of Restaurant Personnel :

Maintenance Book/Slip : Used by the staff for Maintenance purposes. This is made in triplicate. It is filled out by the Senior Captain. One copy is kept with the Maintenance engineer. One with the Maintenance supervisor and one with the Senior Captain.

Formet

FORMAT

ABC Hotel : Date :..........................

Name of the Restaurant :

PLEASE REPAIR THE FOLLOWING

1.

2.

3.

Complaint made by ____________

Date : ________

Complaint received by ____________

Date : ________

Indent Book : This register is used for getting various materials from the store *e.g.* straws, milk.

FORMAT

ABC Hotel : Date :

Name of Restaurant :

Material Required on ________

Material Indented on ________

S.No.	Name of Item	Stock in Hand	Quantity Required	Comment

Signature of Storekeeper :

Signature of Restaurant Personel :

Guest Reservation Register: is used for reserving tables for guests in advance. A register is kept by the houses to book the tables.

FORMAT

ABC Hotel : Date :..........................

Name of the restaurant :

Shift :

S. No.	Name of the guest	Number of guests	Time

Signature of Hostess :

Steward's Allocation Sheet: It is kept in the beginning of the shift. It is used to keep an account of different stewards allotted to different tables or stations.

FORMAT

ABC Hotel Date :................................

Name of Restaurant :

S.No.	Name of the Steward	Steward Number	Table Number or Station Number

Signature of Senior Captain :

Quality Maintenance

Some important checking methods are as follows :

Detailed Check Pad System : Some establishments operate menus which do not change. In such cases, checking and billing may be simplified. Here the check-pads have full menu item details printed on them, so that a waiter merely has to fill in the number of portions required against the items. The check (with

a carbon duplicate) can serve as a bill pad and receipt. Pricing is done on this copy itself namely, cash entries are made only against those items which the customer has consumed.

Carbon Copies : Duplicate, triplicate or single check system may be adopted, but triplicate checks are usually used now.

Single Carbon : One single carbon is used to prepare 2 copies, one of which goes to the kitchen and the other is kept at the station which is later sent to the restaurant cashier.

Double Carbon : This method is mainly used in restaurants offering a la carte menus. Copies are made in the following format 1 + 2 *i.e.* 1 original and 2 carbon copies. The original copy or KOT (Kitchen Order Ticket) is sent to the kitchen. The first carbon copy is kept at the station for record and the other goes to the cashier for preparing the final check. Here, KOT =/ Bill.

Triple Carbon : The triplicate system involves one short transparent paper (called flimsy) so that the waiter has an original and 2 copies. To avoid 2 carbon papers in the triplicate system, one double-sized carbon is used. The second copy is the flimsy tissue which takes the carbon impression of the reverse. The flimsy remains on the sideboard, to remind the waiter what is the next course to be served. This method is used in very busy restaurants offering high class a la carte menus.

Triplicate Checking System : In this system, a book or a pad having a series of 3 pages with the same number and arranged consecutively is provided at each station. The waiter writes down the information such as date, station, waiter number, number of covers, table number, guest's name and number (only for resident guests) and then signs this. Here KOT is the original copy.

Copy I : The original copy or KOT is given to the Aboyeur who has a table number board. He stamps this copy with time of receiving, shouts the order to the respective chefs and put

the KOT on the table numbers board against the particular table numbered spike. When the entire order has been picked up, the Aboyeur punches the KOT and puts it into a locked box which can be opened only by the F and B control department.

Copy II. (Record's Copy) : Is kept at the sideboard or later taken for records and analysis.

Copy III. (Restaurant Cashier's Copy) : The restaurant cashier makes the bill in accordance with this particular copy. Later this copy is also sent to F and B controls for checking, if discrepancies are suspected. This system has however not deemed complete, if the guest has ordered from the bar also, in which case, wine/aperitifs checks should be collected from the wine waiter. One copy is retained by him. The second goes to the dispense bar or cellar for procuring the orders which is signed by the waiter. The third copy again goes to the cashier where entering is done into the bill when the guest wants it. The final bill is of the wines and hard drinks.

Cashier stamps the bill only when he/she receives the money from the guest via waiter in cash or the non-resident guest signs it, in which case the bill goes to the front desk for posting into the guest's final bill. If the hotel offers the credit card facility, then the guest's credit card is impressed on a slip which along with bill is signed by the guest. On a later or a fixed date, the establishment settles the bill/bills with the credit and company.

Check Pad System : In this system, 5 self-carboned copies are made by National Cash Register Machine (NCR Machine)

Copy 1 → Goes to kitchen

Copy 2 → Goes to Cashier

Copy 3 → Goes to Accounts department

Copy 4 → Goes to F and B Control

Copy 5 → Goes to the Steward for his personal record.

Wine and Other Checking : Checks from dining room to

kitchen do not constitute the whole checking system in a hotel or restaurant. They are also required for wines and liquors, to complete and render an accurate customer bill and reduce pilfering. Checks from the wine waiter for orders from the dispense bar and cellar are usually made from pads of a distinct colour. One copy is retained as an aide to memory by the wine waiter so that the correct number of bottles of the right wines reach the correct table. One copy goes to the dispense bar or cellarman to procure the drinks ordered. One copy is returned to the cashier where it is retained during the course of the meal. Shortly before the conclusion of the meal, information on the wine check is entered on the customer's bill (together with details provided by checks of other departments).

Computerised System of Billing : Remanco refers to Restaurant Management Company. In this a calculator like equipment, known as the Electronic Server's Pad (ESP) is used. The waiter enters the quantity of food with the code number of the dish. The order is electronically transferred to the kitchen which saves time. Also no cashier is required, the waiter himself handles the cash.

Point of Sale (POS): In this system every sideboard has a computer terminal. The program which is run is multi-functional and thus multi-channelled. It keeps records, tracks sales, provides data and sales summary, calculates checks and helps the Restaurant Supervisor to know what dishes are to be serve at any particular table.

OTHER SPECIAL CHECKS

En Suite or Suivant: This check is prepared when it is necessary to write out more than one food check for a meal. *E.g.* where a dessert check is to be written out after the first and main course has been served. At the head of this check the word Suivant or En Suite is written which means the 'following' check and shows that one check has already been written out for that particular table.

Suivant

(Name of Establishment)	
Table No.	No. of Covers
SUIVANT	
2 Peche Flambe	
Date 7/ 2/ 98	Signature

Food Check Supplement

(Name of Establishment)	
Table No.	No. of Covers
SUPPLEMENT	
1P.Pois(N/ C)	
Date 7/ 2/ 98	Signed CEH

Food Check Retour/En Place

(Name of Establishment)	
Table No.	No.of Covers
RETOUR	
1 Poulet roti £10.75	
EN PLACE	
1 Poisson £7.50	
Date 7/ 2/ 98	Signature

Supplement: When an extra portion of food is required because sufficient has not been sent from the kitchen, a special check must be written out headed 'Supplement'. This means to 'supplement' what has already been previously sent. It should be signed by the head waiter or supervisor and normally there is no charge (n/c) for it. But this depends on the policy of the establishment concerned.

Retour : Where a wrong dish has been ordered and has to be sent back to the kitchen and replaced, a special check, must again be made out. If the service being carried out is from an a la carte menu then the prices of the two dishes concerned are shown. Two main headings are used on this special check, Retour, or 'return' and the name of the dish going back to the kitchen and 'En Place' or 'in its place', and the name of the new dish to be served.

Accident : It occasionally happens that the waiter/waitress may have an accident in the room and perhaps some vegetables are dropped. These must be replaced without any extra change to the guest. Here a check must be completed headed 'Accident'. It will show the number of portions of vegetables required and should be signed by the head waiter or Supervisor In-charge. No charge (n/c) is made.

Check Pad to Enable waiter to Identify Specific Orders : With the modern day trends towards 'covered' dishes being presented to customers at the table it is increasingly important to identify specific orders before placing them on the table in front of the appropriate person.

A system for ensuring that the right customer receives the correct food without the constant lifting of the dish covers is to identify on the order which customer is having which dish. The covered dishes are then settled at the hot plate prior to leaving the kitchen.

Extra Charge : If a guest wishes to have a dish which the

restaurant does not serve normally and the chef is willing to help this then an extra charge check is prepared which accounts for the special dish.

No Charge : A restaurant, let us assume, serves 'Bananas Au Rum, which costs Rs. 400. Now if the restaurant has no Rum then this has to be availed from the Dispense Bar which would otherwise charge the guest for this. However, since the charge of the Rum has been included in the price of the dish, so a 'No Charge' check is prepared and new rum is dispensed without any payment from Restaurant.

Void : Due to certain acceptable reasons, the guest may have to cancel an order. Then the original check is to be made 'void'.

SERVICE IN ROOMS

The Room Service Manager : The room service manager is a department head. This is a difficult position to fill because it requires practical experience in service, managerial skills. An individual who has never worked as a food server, never pushed a room service table or has never operated the telephone switchboard will have a difficult time managing this department. Most hotel companies require management trainees to spend some time as room service assistants.

Room service is different from dinning room service in that it is rendered without direct supervision. As soon as the servers leave the department, they are on their own. A room service manager must establish strong discipline and set high standards of professional behaviour. Since the room service manager has little guest contact, a strong administrator is well-suited for this position. Good scheduling skills are necessary to adjust the payroll to constantly shifting requirements. Since the department operates all days a week and in many cases around the clock, a number of skilled assistants are necessary to keep the department operating.

Room Service Captains : Hotels with many hospitality suites or those that are in the luxury class and cater to clientele who often entertain in their suites, require room service captains. These individuals among other responsibilities, sell and serve parties in suites. When no parties are taking place, they work as supervisors dispatching orders and inspecting tables.

Room Service Servers : The same criteria that is used when selecting servers for the dining rooms also apply for room service servers. It is important that the individual is mature and able to work on his or her own. In the past, room service servers have been males. But it is advantageous for a hotel to have also female servers on the staff. Room service servers however may encounter strange and embarrassing situations. They are entering people's temporary homes, some of whom are famous. Therefore complete honesty and discretion are expected. Like all servers, room service servers must be hard-working, quick and cheerful. They make a lasting impression on guests.

Order Takers : Order takers have a key position in the department. They do the same job as captains in dining rooms without the benefit of seeing the guest and getting gratuities. Order takers are salaried and work behind the scenes. They are the first contact between the guest and the department. They are sales people and are knowledgeable about the composition of dishes, the daily specials, the names of mixed drinks, and the wine list. This is not easy because order takers work in isolated offices and rarely see the food before it is sent out. It would be helpful if order takers were allowed to order from the room service menu and were give the opportunity to taste what they are supposed to sell so enthusiastically.

Order takers are precise as well as good listeners. All information taken over the telephone must be recorded properly. When an order is delivered to the room and an item is missing or wrong, it is very difficult and annoying for the guest to have the situation rectified.

Order takers are the first persons to handle complaints. Most complaints are about delays, some of which are inevitable. The question then becomes how honest the order taker should be when delays occur. The standard answer is that the food is on the way. The department does not want to lose sales, and often the order takers are instructed to promise delivery times which cannot be kept.

This practice is not fair to those guest who have appointments and can be inconvenienced by delays. Sometimes guests call a numerous times and finally cancels the order because they cannot wait any longer. In such cases, the hotel loses twice. First, it makes a patron unhappy and this person will most likely go to a different hotel on his next visit. Second, the order was probably being prepared or even on its way and the hotel then loses the food and the labour.

Time orders are critical, which are orders placed the day before with a specific delivery time stipulated. Even with the best planning and staffing delays can occur when the amount of orders exceeds capacity. When such a delay occurs, the order taker should be honest and advise the guests. Time orders are given preference over all other orders. When new orders are placed, a realistic delivery time should be mentioned.

Complaints about food and service are rare but harsher than in restaurants. People in the privacy of their rooms are often more vocal and critical than in a public settings. Sometimes they also drink a bit more than they would in a restaurant. When there is a serious complaint, a member of the management team or a room-service captain should go to the guest's room, investigate and apologize. A telephone call in such a situation is not enough.

Room Service Cashiers : In most cases, cashier's work for the Accounting Department and are not part of room service, but they obviously play an important role. Smaller hotels have a combination of cashier-cum-order taker. These employees are

well-trained in both capacities. Cashiers must be easily accessible to the room service servers, since checks must be posted as quickly as possible.

During breakfast when many checks are pending and many patrons are likely to check out afterward, if cashiers are not well-located, busy waiters will tend to hold checks in order not lose time, and this increases the chance that checks will not be stamped. When guests pay in cash or by check or credit card, the room service server has to make a second trip to complete the transaction.

Location of Department : Room service needs designated areas. It is not essential that it is adjacent to the kitchen as long as it is next to the elevators. Of course, room service located next to the kitchen and elevator is ideal.

In some hotels, the room service is handled from different kitchens during different shifts. Often, there is a designated room service breakfast kitchen which closes down after service. In many hotels, not enough space is allocated and the department is tucked into a corridor or a corner. Obviously, a department in such a location cannot run efficiently.

Operators need a climatically comfortable enclosed space for privacy. The persons in charge of dispatching, the manager or captain, takes the order and, in turn gives it to the next available server. Orders are dispatched as received. On boards, all special orders for each particular day, such as parties, receptions, cake orders, and complimentary orders, are displayed.

There is a small office for the room service manager which is for administrative chores such as scheduling, interviewing respective employees, and taking disciplinary action when necessary. Such a office is also needed when the manager has to discuss details on the telephone with the clients.

There is a server's waiting area, equipped with benches or

chairs, a table and perhaps a cloths rack. Smoking is allowed in that area. Between orders, servers must have a place to relax, and take their jackets off. While waiting, the servers should not go to the employee's cafeteria, since they are still on duty and must be available immediately when an order is called.

Room service also has a storage areas for linen, fuel, heaters, and other equipment, which may be different from the restaurants' equipment like ice buckets for beverage service, special trays for continental breakfasts, special flower vases, and so forth. There is a refrigerator to keep flowers, butter, and condiments. There should also be a safe place to keep complimentary fruit baskets.

A large setup area is also needed. During busy periods, room service tables are present and ready to roll when an order is received. Continental breakfast trays are normally set the day before on custom-made racks. All this is bulky and requires space. Storing heaters also takes space. But special shelves are usually constructed for them.

Storage of room service tables is a big headache. There never seems to be enough tables when they are needed and too many when it is slow. Tables, when dispersed in a large hotel, are not noticeable at all, but when returned to a central location, they cause a major space problem.

Folding tables are practical, but are much less sturdy than full tables. Folding tables naturally are an advantage but only while being stored. When in use, they are just as bulky as other tables, support less weight, and have a tendency to sag in the middle.

Soiled table returns is also a logistics problem. Even though there are clearly defined meal periods, there are no peak periods for collecting tables. Breakfast trays and tables are normally removed by the morning maids when the rooms are made up. In order to avoid pilferage and breakage and to keep the hotel clean, collections should be done as early as possible.

For practical reasons, the dishwashing should be done adjacent to the Room Service Department. In this way, all items can be quickly recycled or stored.

Most breakages occurs during table collection and during breakdown. Typically, long rows of tables are lined up in the corridors. Sometimes porters attempt to push too many tables at one time, causing wheels to snag on the debris, and whole tables to overturn.

In some operations, the room service breakdowns are littered with broken china and glass. Strong cooperation between the steward's department and the room service manager can keep breakage to a minimum. Porters can be instructed to fold the table clothes over the table to keep some of the china and glasses from falling.

Breakfast trays should always be transported on suitable shelf trucks. Ideally, the room service tables should be broke down on the back landings on each floor and all components placed into custom-designed trucks, but unfortunately, most back landings are too small for this.

Elevators : Most hotels do not have enough elevators, since elevators have large initial costs and that space is permanently lost. An elevator shaft running through 40 floors takes the space of 40 guestrooms. Most hotels only have the number of elevators needed legally, with the capacity to handle average demand.

Many hotels have different elevators for reaching different parts of the building, and to get to a room requires a change of elevators. If a hotel is limited regarding elevators, it can allow employees to use the front elevators, but this, of course, is not the style of a first-class hotel. Front elevators used for room service are very unsanitary, even when the tables are covered with a clear plastic sheets.

Most hotels do not allow uniformed employees on front

elevators except for the front office staff when rooming guests. If this is the case, the back elevators is shared by room service, housekeeping, engineers, delivery people, luggage, and often the kitchen, which takes food to the banquet kitchen or dirty china to the dishwashing area.

Most elevators are converted to automatic operations, and at peak times some employees press the up and down buttons just to get on an elevator or to see who is on it. Some employees keep the doors open to chat or even push the stop button to run a small errand, thus putting the car out of service. For these reasons elevator service can be agonizingly slow. This is especially true during the peak morning period when fast breakfast service is needed and housekeeping brings maids and linen up to the floors.

If possible, the room service should have its own elevator. Out of the existing back of the house elevators, one should be designated as the room service elevator. Room service management generally has a key to the car to control it manually if necessary. The remaining elevators are for general use. The room service elevator has a telephone and is operated by a porter. When loaded, the servers call the car and the porter should come to the appropriate floor.

If well-coordinated, a server can serve a number of orders on different floors without going downstairs, providing someone in the room service area is putting the orders on the elevator. This system is practical for breakfast when many relatively small and fast orders must be served.

Tip pooling in that case is essential. This system is almost like the old floor pantries, where the hotels maintained a staffed pantry on every floor ready to dispatch smaller breakfast orders quickly, with larger orders done in the kitchen and sent upstairs.

The flying kitchen concept is also used by some hotels, which involves putting in the elevator enough equipment to

serve a continental breakfast. The orders are phoned to the elevator, and the elevator then goes to the right floor. One or two servers serve and get picked up again by the elevator. This system works well providing there is a second elevator available to room service to dispatch a la carte breakfast orders on tables, since the flying kitchen elevator can become so crammed with equipment that there is little room to be able take orders.

A disadvantage of the this concept is that it ties up servers for continental breakfast service only, when they could be used for table breakfast orders. Check control is also difficult in a flying kitchen because the breakfast checks have to be handwritten or stamped in the elevator, signed by the guest and brought to the cashier as quickly as possible to be posted. Lack of elevator capacity is one of the biggest problems of room service. It is frustrating to stand in front of an elevator with an order while the car passes by filled with other employees, equipment, or display items going to a function room.

Equipments : The second biggest problem in room service after elevators is lack of equipment. All items used in room service-tables, heaters, china, glasses, silver, vases, trays, and linen-take a much longer time to recycle than they do in a restaurant.

At the same time, when an order is dispatched, it has to be complete. There is no opportunity, as in a restaurant, to bring a piece of equipment a little later, perhaps while the drinks are being served. A room service waiter cannot leave the kitchen until everything needed for that order is on the table or on the tray.

All room service operations have perpetual equipment shortages. The causes are many : one is the obvious fluctuation in demand, another is the much higher rate of breakage occurring than restaurants, and a third is a very high level of pilferage committed by guests as well as by employees. Thousands of rupees worth of very attractive china and silver is left and

deliverymen and outsiders use the back corridors and elevators where equipment is left for pickup.

Very expensive items, such as insulated thermos bottles, large silver trays, and silver buckets are noted by the dispatching manager on an equipment sheet. After the meal, when the server is then sent back to the room to remove the equipment, these items are checked. Some hotels have printed tent cards placed on every table listing the prominent and important items on the table to discourage guests from stealing them. This may sometimes act as a deterrent, but it does nothing when the table is in the hallway.

Since room service tables are difficult to store, and to fill hallways is a fire hazard, so some hotels have no choice but to keep only a minimum number of tables in circulation, thereby jeopardising service.

Room service tables also get abused and used by other departments. They are the most handy things to transport something on and are taken by the chef, stewards, banquet waiters, engineers, deliverymen and even outside contractors. Sometimes the weight place on the table is too much, and the table gives in. Tables rolled about excessively in the back of the house get very dirty; the wheels pick up kitchen grease and leave ugly marks on the carpeted front of the house.

Complimentaries : Every hotel sends out complimentary fruit baskets, liquor, or other gifts to valued customers. Sometimes corporations purchase fruit baskets for special clients or send their own gifts to the hotel to be placed in the rooms. Room service places these gifts in the room.

The hotel has to decide how much gratuity for each category of gifts is to be charged to the customer. The gratuity should be fair, but does not have to be 15% of the selling price in every case. The gratuity charge depends greatly on the type of setup required and how much time it will take to get the gifts to the rooms.

Hotel Le Plaza New Delhi

Last ***First***

Guest Name : .... Arrival Date : ....
Estimated Arrival Time : ....AM........PM Room Number.............
Remarks ....
Rs. + ...
Method of Payment: ....Staff ....Promotion ....
1. Complimentary : Per ....
2. Credit Card : Per .... Business ....
Relations
Type .... Number ....
Expiration Date ....Approval Code ...
Name......... Phone No. ( ) ....
3. Direct Bill Name .... Phone No. ( ) ....
Company .... Contact ....
Address
4. Charge to Room No............................Room No. ....
....
Delivery Instructions : ....
Cards (s) to be attached : ....
Note : ....
Room Gifts : (For Room Service only)
Quantity Gift Items Cost .... Retail price
Fruit Basket Single............ Double ....Special ....
Champagne Full................1/2 ....
Wine and Cheese ....
Cheese Tray ....
Wine Bin ....
. Teuscher Chocolates 14 OZ. .... 9 Oz ....
. Flowers : Arrangement .... Specify : ....
, Plaza Tie Scarf .... Key Ring ....
. Plaza Bud Vas ....
. Books : The Plaza ....
. Plaza Umbrella ....
*Plaza Clock ....
Other : ....
Requested By :. ....*Authorization :...............................
Register Used for Complementaries

When the gifts are to be placed before the guest's arrival, room service has to get the keys from the front office. This is turn requires room assignments by the front office.

If the assignment is late, room service cannot deliver the gifts during a slow period between meals and is later faced with the problem of getting dinner orders dispatched and also sending fruit baskets.

Basket and gifts connected with tours can amount to large numbers, and the department arranging this notifies, in writing, the Room Service department and the kitchen well ahead of time to allow for proper planning.

Record Keeping : For the protection of the hotel, the guests, and the employees, it is very important that records are kept of every order served. When the order is taken by the order taker, the room number and name of the guest are noted, and the order is time-stamped.

Then the slip is handed to the dispatcher who is a captain or manager. He or she keeps a large printed sheet, one for every day and every meal, which shows a little box for every room and every suite in the hotel.

When the order is given to a server, the server number is entered on the dispatcher sheet in the proper room box and also on the order slip.

It is then time-stamped once more to record when the order was actually handed to the server because at peak periods there might be a delay until a server is available, and servers work on a rotation basis.

The order slips are made in triplicate. Once slip stays in the office as a permanent record and also in case the guest calls to inquire about the order. The other two copies are used by the waiter to order the food.

Every waiter carries a record card, about the amount of a

guest check, for each shift. For every transaction, the room number, check number, amount of the check, and charged gratuities are noted.

The record cards are issued daily by the room service manager and should be time-stamped at the beginning and at the end of the shift.

They remain as a permanent record in the room service office. Through the records, the hotel knows what kind of orders were dispatched, by whom they were delivered, how much delay there was between receiving the order and getting it dispatch through a waiter, and how much gratuity the guests are charged.

Gratuities : Room Service servers depend on gratuities for their livelihood, and it is important that all orders are handed out in rotation. All server's numbers are put on a sheet.

Orders are given to the servers in sequence. When a server returns the number is added to the bottom of the list. By luck it can happen that a certain server gets many large and lucrative orders on a given day and another server gets very small orders which means one waiter gets more tips.

This is luck and little can be done about it. With discretion, the dispatcher can combine small orders provided it is in the interest of the house and it is fair.

It is difficult for captains to make gratuities unless room service can arrange for hospitality suites for larger luncheons or dinner where the services of captains are required.

In these cases, a fat gratuity change of 17% is added, 12% of which goes to the server, 5% to the captains, and 2% to the office to be divided by the manager.

Servers are not allowed to add gratuities to checks without the permission of the clients. This policy is made very clear to all employees and enforced strongly.

Waiter	Table Requid. Moved			Date
Check No. Last 3 Digits	Room	Name Where Check is Held in Room	Pot	Amount No.

Room Service Record Card

Hold Check Stub for at Least One Month : Room Service has record cards. Every server must fill out this card for every transaction. The column "Pot No." refers to the silver coffeepots. They are numbered and the servers are responsible for retrieving them.

Service Charges : Most hotels charge a flat room service charge, added to the check to compensate for the high operating costs. Most hotels apply this charge to food orders and not to liquor orders. In some cases, the room services charge is included in the price of the continental breakfast to speed up service. Applying a room service charge is not always automatic. For instance, a coffee delivery for 20 patrons in a suite does

not warrant 20% room service charges. It is the responsibility of the service manager to decide in such cases how much room service charge to apply. Some hotels have a flat delivery charge for special orders.

Quality Control : Ideally, every order should be inspected by the management or the captain before it is taken to the room. As in the case of the dining room, the captain supervises the waiters and has to doubly make sure that every order is perfect and nothing is forgotten.

The physical layers of the room service department makes this inspection impractical or even impossible. The kitchen might be far away from the dispatcher, the elevators in a different location, and even the setup for the tables is somewhere else. Especially in room service, supervision is important because one employee has to lay the table, order the food and drinks and to make sure that nothing is forgotten or confused.

Menus : Besides the large room service menu, which is most likely also part of the guest directory and placed in the room by the maids, room service also has a small party menu if the hotel has hospitality suites. The menu is small enough so that it can be mailed and usually has various popular reception dishes, hot and cold hors d'oeuvres, cheese platters, dips, nuts, and pretzels listed.

The menu lists how beverages can be purchased, bartender charges and other hotel policies. This includes corkage charges. Corkage charges are imposed by the hotel if liquor is purchased outside and then brought into the hotel. While it is difficult and silly to try to impose a corkage fee when someone brings in a single bottle of liquor, the hotel has the right to impose a corkage fee and a gratuity when liquor is brought in from outside for a party. The hotel is in the business of selling food and beverage and is entitled to compensation because the equipment of the hotel and the labour of the hotel are used.

The room service staff generally notify room service when they see liquor being brought in. When there is a large order for glasses, and ice, the room service manager should explain politely but firmly the corkage policy of the hotel.

Guests using hospitality suites often keep open bottles there from one day to the next. The room service manager assigns a captain and waiters to take care and they are responsible for keeping the room clean and resupplied with glasses, ice, and bar supplies.

Corporate clients entertaining regularly often ask for the same servers at their functions. This can be a problem because of the large gratuity involved, yet the wish of the patron should be granted. When some servers are favoured by guests, this situation cannot be easily remedied.

Scheduling : Scheduling must be very flexible. In most hotels, the greatest demand is for breakfast, whereas luncheons are rather slow. It is therefore practical to have part-time servers for breakfast who will leave around 10 a.m. and go to luncheon jobs. The amount of breakfast business is estimatedly by considering the house count of the previous day. A hotel with a large house count can have heavy breakfast business the next day.

Dinner business varies greatly and the house count alone is only a partial indicator of how business will develop. If the room service manager has reasons to believe that business will be heavy, he or she schedules extra servers or calls in servers on overtime without difficulty.

The effectiveness of good scheduling is measured by labour cost percentages, room service labour, including management but not cashiers. Stewards, and kitchen labour, account for about 26-28% of sales. This payroll is without fringe benefits. A quick calculation shows that room service, as a department, is not a profit centre, yet it is a service without which the hotel would not be able to sell rooms and suites.

Room Service Pointers

1. Low flower vases should be used.
2. Flowers should be put on every order tray.
3. Tables, wheels, and heaters should be clean.
4. Tables should be covered with plastic sheets during delivery.
5. A courtesy card should be put on table with the server's name and pickup information.
6. Choices of complimentary newspapers for breakfast, should be offered.
7. When arriving in the room, one should inquire where the patron wishes to sits
8. Chairs must be arranged.
9. Pens should be offered for signing check.
10. Good telephone manners should be utilised to sell subtly.
11. Operators must be well-informed about specials.
12. About items not available.
13. One must be willing to accommodate special requests and be discreet.
14. Extra lids for coffee and teapots are essential. They constantly get lost. Cardboard covers should be provided for juices and water.
15. Extra napkins should be provided as also choice of individual jams, jellies, and honey.
16. Special speedy continental breakfast service should be provided.
17. All drinks should be served from iced decanters, and sodas from split bottles.
18. Wines should be served with in half bottles and in carafes.

19. Delivery time promises that cannot be kept should not made.
20. Linen should be checked carefully.
21. Extra large teapots and thermos pots for coffee should be kept stocked.

DIFFERENT SERVICES

Gueridon and Flambe Service : Gueridon means sidetable in a restaurant. Gueridon service naturally means sidetable service. Any work that is carried out on a sidetable before the service like, making a salad dressing, dressing the salads, carving, preparing a grapefruit etc. can be termed as Gueridon services. Gueridon service includes flambe work or flambe service, which is an extension and elaboration of the sidetable service.

It is difficult to pinpoint the origin of Gueridon and Flambe service. It provides visual appeal to the customer. The modest grilling of hamburger or the preparation of pizza in a coffee shop has, at its own level the same kind of visual appeal that more elaborate form of lamp-cooking have in luxury establishments. As more and more people eat out there is an increased demand for something different. Gueridon and Flambe service fills this demand to a certain extent.

Gueridon service such as carving, salad-making, is usually praised not only for promotional appeal on business grounds, but by guests, gourmets and professionals alike as fulfilling the best conditions of gastronomy. Sidetable cookery particularly flambe work on the other hand is much more controversial from an epicurean point of view, even though it's merchandising value is generally acknowledged.

Many gastronomes are of the opinion that cooking should be left to the chef in the kitchen and that an amalgamation of culinary skills is not desirable in the restaurant. Some foods and some processes are clearly unsuitable for sidetable cookery

and extravagances should not be dragged in merely to achieve something different. Guests are impressed by the skills shown in gueridon performances. Flambing in particular, is a reliable means of attracting the attention of other tables in a restaurant, and has the effect of provoking repeat orders.

Above all, the flickering lamp, the gleaming silver, the mise-en-place on the Gueridon adds substantially to the restaurant atmosphere and the customers in the high-class restaurants continue to appreciate and demand similar visual services, in particular individual-seen service at the Gueridon.

Appearance and Hygiene : More than anything, individual service and cooking at the Gueridon depends upon the personality and appearance of the maitre d'hotel or the station head waiter who performs the service. Good manners, pleasant speech, smart appearance, scrupulous grooming and cleanliness are basic needs and should be given emphasis before all the technical skills which follow.

An underlying factor which gives appeal to Gueridon work is that it can be such a strong confidence-builder. Everything going on at the dish or everything that is to be served, can be clearly seen from close quarters. All this confidence can be destroyed if the person giving the service has untrimmed and dirty fingernails, soiled shirt cuffs, spotted jacket and so on. Unthinkingly brushing back hair with the hands and then returning to serve can produce an adverse reaction from the guest, even though hair and hands may appear to be clean. Personal hygiene assumes paramount importance when service is given so near to the guest.

Equipment for Gueridon Service : Gueridon Trolley : Gueridon trolleys have now acquired special significance in the restaurant world. They come in different sizes. Actually a Gueridon trolley is a modified sidetable on wheels. It should be of the same height as that of the tables in the restaurant. It normally has a built-in picnic-type butane gas flame lamp from which

effective Flambe work and Gueridon cookery could be achieved. It should have underleaf shelves for stocking cutlery and other dishes for keeping wine and liqueur bottles.

Table Cooking Lamps or Cheffing Lamps : Where the Gueridon trolleys with built-in butane gas flame lamps are not available cheffing lamps are used. They are relatively costly items made in more than one size, but usually about 8" to 10" in height and with a grid diameter of about 6". Many maitre d'hotel's are strongly in favour of lamps using methylated spirits and are thoroughly accustomed to controlling the flame and the heat by adjusting the wick.

Apart from this traditional method of heating there are new types of lamps which whilst of conventional ornamental silver-plated external appearance, are equipped with compressed gas of the butane type. Once the operator is accustomed to gas lamps, their use offers a well-controlled and clean flame well-suited to cooking in the restaurant. The gas flame is readily adjusted by movement of the tap in a way similar to that in which the wick screw is turned.

Crepe Suzette Pan Or Cheffing Pan : They resemble frying pans in shapes and sizes normally ranging in diameter from 9" to 12". The pans are completely either wholly plated with silver or as is more preferred, copper on the outside with the silver plating confined to the interior surface. Copper is an efficient conductor of heat & helps spread of heat throughout the pan relatively quickly and effectively.

Steak Pans : These are of the same type as that of Crepe Suzette pans except the shape. Steak pans are oval in shape and come in different sizes to suit different requirements. The construction is the same as that of Crepe Suzette pans.

Other Tools : One of the principles of cooking and carving “In the room” is that use should be made only of restaurant cutlery and that cooking implements as such should be avoided.

For carving, for example, table knives are normally used for smaller items, (clever waiters normally retain a well-cared for specially sharpened table knife for this purpose) and carving knife and fork for larger items.

It is of course true that chef trancheurs who come into the restaurant to carve at the buffet or meat wagon, traditionally have their own tools, but otherwise standard restaurant gear is used by waiters for normal gueridon work.

Shahslik Sword : Flaming sword service has also been a feature in some restaurants. Purporting to reflect Middle-Eastern or east European traditions, flaming sword service is infact rather a restaurant invention.

These swords have hilts protected by a hollowed guard and also incorporate a second shelf below the hilt which can contain flambering material like Brandy and also capture juices. Sliding retaining bolts are also incorporated in many Shaslik Swords.

Points to be Observed in Flaming

1. Most liquids having noticeable alcoholic content are capable of being flamed once the alcohol is vaporising. Obviously, however, those with higher alcohol content will do so more easily. To be able to flame fortified wine such as- Sherry, means keeping it undiluted and having it vesseled, for flaming in a dish spoon or ladle, in a heated condition.
2. Even in the case of stronger spirits like Brandy or Rum, and liqueurs, it is important not to allow the flaming liquid to become diluted with some syrup or juice until it is Well alight. It is further vital to ignite quickly on the addition of liquors.
3. The Flame should be ignited by touching the liquor to the lamp flame and never with a match. This should be ignited.

4. Once flambing is in progress, stirring promotes the blaze and basting is therefore more effective and spectacular if done when the pan is afire.
5. Sugar sprinkled into the flame in sweet dishes helps change the flame colour.
6. Flames are extinguished by smothering with the lid or blanketing with cream or sauce, never by blowing.
7. It should be kept in mind that flaming does not aid in heating of the food, thus the food must be adequately cooked and be piping hot.

Gueripon Service

Various Types of Gueridon : A gueridon can be simply defined as a small ornamental table. Before the advent of waiter's sideboards all restaurant service was done from a Gueridon.

In the olden days, in many restaurants, waiters used to carry their own fold-up gueridon, along with a tray laden with all the silver service covers, to the table, open it up beside the guest's table and place the tray on it and begin a very elaborate form of service.

The Gueridon was also useful for all the table preparations performed by the waiter—fish filleting, carving, preparation of fruit etc.

Today's gueridon usually takes the form of a trolley, making movement much more efficiently. Although in some restaurants the small sidetable still exists-the important thing to remember about a gueridon, is that it is movable.

The modern trolley usually has a working top and shelves under. The most common trolleys found in restaurants in India are the pastry trolley and a flambe trolley complete with a gas cylinder.

In the West another popular trolley is an hors d'oeuvres variety and in some high class restaurants—the carving trolley.

Pastry Trolley : The pastry trolley usually consists of 3 tiers—the top being covered by either glass or more commonly of fibre-glass. This enables the guest to see what is on offer in hygienic conditions, particularly in non air-conditioned dining rooms. The second tier can also be used for desserts/pastries if required and if conditions are suitable. The bottom tier is used for the storage of cutlery and crockery.

The Flambe Trolley : This trolley is perhaps the most glamorous in that it helps produce the best showmanship in a restaurant. It consists of a cupboard area for storing a gas cylinder, a recess area' for storing foods/liquor and a top with cooking equipment for flambe' on copper pans. Because of the nature of this trolley-much care has to be taken whilst moving it about the room. Gas cylinders should be carefully checked and the customers should not be able to see the cylinder nor smell any gas.

Hors d'oeuvres Trolley : This trolley is similar to the dessert trolley except that the top should be fitted with a series of recesses for holding small rectangular dishes used for serving a variety of hors d'oeuvres.

Carving Trolley : This trolley is the most elaborate of all. However, it is seldom found in India because the concept of roast joints of meat is not particularly popular, other than in buffet styles of service.

The trolley is usually silver-plated with a large dome-like cover. This cover slides under the trolley so that the flat surface can be used to hold (and carve) the meat. This surface is usually heated by spirits to keep the joint hot. There is usually two deep recesses to hold the gravy and sauce, while the bottom shelf accommodates plates for service.

Marketing Advantages : A restaurant can be compared to a theatre—a live theatre with actor and actresses. When the curtain goes up—the play commences. In the restaurant when the service begins it is similar to that of the curtain going up.

Waiters can be compared to actors playing a part in the Gueridon service. They have the chance to show off the skills acquired by careful training.

A restaurant which carries tempting displays of pastries and desserts have higher sales than restaurants without. Many guests finish a main course and feel their meal is complete. The waiter enquiring whether they would like a dessert is no temptation. Even if handed the menu they will not bother to read through the same old stuff— (Cream caramel, fruit salad, gulab jamun, icecream). However, if a delightful array of dessert and pastries is wheeled to their table and they actually see what is available, very few people can resist—and so a sale is made.

Flambe work also provides tremendous advantages for a restaurant. The showmanship and expertise involved in this is really very simple but the operation provides excitement and elegance to a restaurant as well as boosts sale. The cost of the operation is minimal but the returns are considerable. It may take a little longer, but as the performance is at the table and involves the guest they are quite happy to wait. The dish is personally prepared and this too is special and turns an ordinary restaurant meal into an exciting experience. It also has a snowball effect. Another table sees the performance and wants the same thing and so the sales increase.

There are two necessary components to be successful with Gueridon work. One is well-trained staff capable of cooking at the table with aplomb, and the second extremely important factor is the space for the trolley to move around the room without disturbing other guests or bumping into chairs and tables.

The size of the trolley is very relevant. It must be big enough to hold all the necessary accompaniments required for the operation but it must be easily manoeuverable between the tables and chairs.

Aisles between tables with chairs pulled out should be at

least 1.25 metres wide. This will give working space too, without disrupting the order service around the particular table.

In any case, flambe work should only be done in a speciality restaurant which would normally have sufficient space. However, trolleys selling pastries or hors d'oeuvres should also be given sufficient space so as not to annoy other guests otherwise the whole spirit of the exercise lost.

The advantages of Gueridon work to market merchandise greatly outweighs the disadvantages—with the staff and the space required and it can be a great marketing ploy in any establishment.

Preparation of Special Dishes : The mise-en-place for any gueridon work must be through. Every item required for the preparation and service of a gueridon item must be on the trolley prior to service. One forgotten item can affect the performance.

Items to be Carved : A very sharp knife is the most essential piece of equipment. The meat should be carved-not hacked about.

A carving fork—two-pronged for holding the meat in place is also necessary. A good clean, wooden carving board-preferably with funnel indentations which will hold the meat juices rather than letting them run over the side of the board.

Items to be Flambed : There are two types of flambe equipment. A trolley is set up with a gas cylinder and a gas ring or flare lamps used. To work efficiently, the flare lamp must be fitted together correctly, and filled to the right level with methylated spirits. The wick should be of the right length to give the required amount of heat when in use. The wick is trimmed regularly to avoid leakage of spirit fumes which spoils the aroma of the food.

Flambe pans—can be either round or oval and are usually copper for even distribution of heat. Care is taken of the pans to see that they do not become scratched during cleaning. When

sugar is cooked the pans caramel may become hard and difficult to remove. Soaking in water dissolves the sugar—it should not be scrapes off with anything abrasive.

Once the flare lamp has been lit the trolley should not be moved.

Spirits and Liqueurs for Flambe : The most important commodity for Flambe work is, naturally enough, the spirit or alcohol used to make the flame. Spirits really make the flame—it is liqueurs that impart flavour. Liqueurs, do not have a the high alcoholic content, and do not give sufficient flame when lit to be of any consequence for non-drinkers.

Brandy and rum, are the two best spirits to use in this work—though Whisky is sometimes used too.

When cooking fruits it is always best to use a fruit-flavoured liqueur—either Cointreau or Grand Marnier or something similar.

Sugar : When cooking with sugar, fine caster sugar caramelises faster, but food dishes being cooked with rum, brown and demarara sugar are more suitable.

Preparing Special Dishes

Crepe Suzette

Pancakes

Better	—	50 gms
Castor Sugar	—	60 gms
Orange juice	—	4 ozs
Lemon juice	—	one lemon
Whole orange	—	one
Whole lemon	—	one
Sugar cubes	—	6
Curacao	—	15 ml
Brandy	—	30 ml

Method : Place castor sugar in the pan and allow to caramelize it. Add butter and allow the caramelized sugar to get mixed with butter to form an smooth sauce. Add half an orange juice, little lemon juice and stir to form a good sauce adding also Cointreau and all the sugar cubes which have been impregnated with orange lemon zest. Reduce the flame and place the pancakes one by one folding them into triangles. During cooking check the consistency of the sauce. Add orange juice as and when required. Remove the pan from fire, add brandy, tilt the pan, increase the flame, flambe it, sprinkle little castor sugar to vary the colour of the flame. Serve into hot half plate 2 pancakes per portion and sauce equally divided. The cutlery given is dessert spoon and fork.

Lobster Newburg : Ingredients required :

Meat from 1 lobster	A teaspoon of finely chopped onion
1/2 cup of cream	2 egg yolks
Butter 50 gms	
Drop of tabasco	30 ml Brandy
	Seasoning to taste.

Method : Slice the Meat. Mix egg yolk and cream.

Melt butter. Add onion and lobster and cook gently. Add seasoning and cook gently till the lobster is tender. Add brand and flame. Add a liaison of cream and egg yolk and stir. Continue to heat but to not boil. When sauce thickens serve immediately.

Steak Diane

Fillet steak—1 No. (150 to 180 gms)

Parsley Butter—100 gms.

Finely chopped onion—One dessert spoon.

Sliced mushrooms—One service spoon.

Worcestershire sauce—3-4 dashes

Brandy—30 ml

Seasoning— to taste

Method : Melt parsley butter in a steak pan, place the fillet steak, add seasoning. Saute it from both sides quickly and remove to a large plate and cover it with half plate to keep it warm.

Add chopped onions to the pan and saute them for a while. Add mushroom and saute then add Worcestershire sauce. Return the steak to the pancook for some time (As desired—Raredone, medium-done or well-done).

Increase the flame till the butter starts bubbling, remove the pan from the flame, add brandy and flambe the steak. Serve steak with onion and mushrooms onto a hot large plate. One may also serve sauted potatoes, stuffed tomatoes and green salad as accompaniments.

Steak au Poire (Pepper steak)

Fillet steak— 1 No. (150 to 180 gms)

Demi glace—ozs (180 ml)

Butter—100 gms

Salad oil—30 ml

Crushed peppercorns—20 gms.

Brandy—30 ml.

Take a fillet steak, flatten with cutlet bat and sprinkle crushed peppercorns. Press it with service spoon so as to embed the peppercorns into the steak. Melt butter in steak pan add salad oil. Place the steak and cook it from both the sides as desired by the guest (rare, medium or well-done), add demi glace and cook it on slow fire. Remove from fire, add brandy and flambe the steak. Serve on hot large plate, pour sauce on top. Serve with accompaniments like pommes frits, gridded tomato and green salad.

Irish Coffee : This is not strictly the place for this recipe but it should be prepared on the gueridon.

Ingredients required :

Stemmed glass	sugar
Strong black coffee	thick pouring cream
Irish whisky	(or any whisky...)

Place sugar in glass, pour on whisky then hot coffee. Over the back of a dessert spoon pour the cream carefully onto the coffee so that it floats on the top. (cinnamon may be sprinkled on top). Serve on a doily covered side plate with a teaspoon.

Carving at the Table : Small items like Chateaubriand are not difficult carving tasks at the table as long as the knife is sharp. Larger items, like joints of beef or ham or even leg of lamb need greater skill and dexterity. Only practice will make one perfect in this respect and it is difficult to give every student sufficient practice because of the costs involved. A demonstration of the carving of a Chateaubriand will have to suffice. A serated carving knife is used for items like ham.

When carving, the knife is moved freely backwards and forward like a sawing action. Too much pressure results in a loss of meat juice, as well as badly- cut slices. Accidents occur when the knife is blunt. When carving a leg of lamb the bone may be held in the hand to steady it. The bone should be covered with a large cutlet frill (or a clean napkin).

To Carve Chateaubriand

1. The cooked meat is brought to the Gueridon and transferred to a clean carving board. Chateaubriand is always served to 2 persons (or sometimes more but 2 is the minimum).
2. Using a very sharp knife the meat is cut with slanting cuts into 4 or 6 slices depending on the size.
3. The slices are transferred with a serving spoon and forkonto the warmed entree plates and served with meat juiced poured over it.

To Dissect a Chicken : Seldom done in restaurants these days.

1. The bird is drained of all juices, into the gravy boat.
2. The bird is turned onto its side and the leg removed, followed by the breast.
3. The bird is reversed and operation repeated.
4. The legs are divided into thigh and drumstick for service.

As portions are cut off they may be placed on the plate ready for service. Bones should only be severed at the joint and never chopped.

Behaviour and Standards of Service Staff : While a long list of "Does and dont's" can be a source of poor morale, certain standards of staff behaviour are expected in good service. Smoking, eating, drinking and gum-chewing while on duty should not be allowed. When not busy with service waiters, one should be at their stations and alert to the need of their guests. They should not be permitted to congregate in the kitchen or a corner of the dinning room, where loud conversation can be distracting to the nearby guest.

Food is not appetizing if served by a person who is slovenly and unclean. Uniforms must be clean and well-ironed. If food is spilt on uniforms some provision should be made for quick changes. Hands and fingernails should be clean and well-groomed. Hair should be clean and neatly styled. A well-trained, smart and helpful staff can sometimes make up for aspects which are lacking elsewhere in the operation.

Below are listed the principal attributes necessary for food and beverage personnel.

Courtesy: The word courtesy referred to certain behaviour that were required in royal courts to show respect for royalty and the upper social classes, later, courteous behaviour became identified with manners and "good breeding".

In today's democratic society, courtesy is still a way of showing respect to others, regardless of their social position or relationship. Courteous behaviour shows care and concern for the other person. Some people lament that what was called "common courtesy" has become "uncommon courtesy" and that good manners do not exist any more.

For the service professional, courtesy is not something to do when there is time, for it courtesy that is the underlying principle of giving services. If one cannot show respect for these who patronize the business, then one does not deserve the business.

Courteous behaviour does more than show respect, though it has been described as the lubricant of human relationship. It reduces the conflict areas in any interaction and it helps to keep actions and behaviour on a level at which they can be managed and predicted. Courteous behaviour yields courteous reactions.

To sum up, courtesy is doing something a little extra helpful, perhaps, checking back to see if everything is going well for a patron or co-worker.

Personal Hygiene : This is of utmost importance as the staff are in direct contact with the customers. Personal freshness is imperative. Male staff should be shaven with immaculately clean hands and well-trimmed clean nails, hair must be short and well-groomed. As for the female staff hair should be short or tied up, no excessive make-up or jewellery should be worn. Sneezing, coughing or blowing the nose near the food whether in preparation or services, must never be done.

Uniform should be clean, well-ironed and shoes polished. Whatever type of uniform is required it must always be clean and smart. Being clean and smart in appearance gives one the confidence to work well. Footware should also be safe, sandals, open back shoe or high pointed heels are inappropriate and potentially dangerous.

Knowledge of Foods and Drinks : The staff must have sufficient knowledge of all the items on the menu and wine list in order to advise and offer suggestion to customers. Further more they must know how to serve correctly each dish on the menu, what its accompaniments are, the correct cover, the make-up of the dish and it's appropriate garnish and also how to serve various types of drinks, in the correct glass and in right temperature.

Punctuality : Punctuality is all important. If the staff are continually late on duty it shows lack of interest in work and a lack of respect for management.

Local Knowledge : In the interest of the customers, the staff should have a certain knowledge of the area in which they work so they may be able to advise the guest in various forms of entertainment offered in places of interest and so on.

Personality : The staff must be tactful, courteous and good-humoured and should have a even temper. They must converse with the customer in a pleasing and well-spoken manner and the ability to smile at the right time pays dividends. With these attributes the staff will help the management by becoming good sales people.

Attitude Towards Customers : The correct approach to the customer is of the utmost importance. The staff must not be servile but anticipate the customers needs and wishes. A careful watch should be kept on customers at all times during the service. Without staring care should always be taken when dealing with difficult customers.

Customers should never be argued with as this will only aggravate the situation. But all complaints should be referred to someone in authority in the food service area.

Memory : This is an essential asset to food and beverages service staff. It may help in various ways in their work if they know the likes and dislikes of customers, who likes to sit where

in the food service area, what are their chief favourite drinks and so on.

Loyalty : The staff's obligations and loyalty are firstly to the establishment in which they are employed and its management.

Conduct: The staff's conduct should be impeccable at all times, especially in front of customers. The rules and regulations of an establishment must be followed and respect shown to all senior member of staff.

Sales Ability : The staff working in the front of the house *i.e.* the front services area to a large extent are image holders of the establishment. They are the sales people, therefore should have selling ability.

Sense of Urgency : Whenever the establishment has the maximum amount of business area in which the service period is as high as net profit as possible, the staff must develop a sense of urgency.

Customer Satisfaction: The food and beverage service staff must see that the guest have everything they require and are completely satisfied. It is of great importance to anticipate customers need. If he/she is friendly, atmosphere in the food service area is cordial and the team spirit amongst the waiting staff high.

Complaints : The staff should have pleasant manner showing courtesy and an even temper and good humour and never show displeasure even though at times things may be difficult. They should never disagree with a customer and if they cannot deal with the situation, it should be referred immediately to the senior member of the team who because of his greater experience will be able to calm the guest and put right any fault. Loss of time in dealing with complaints only makes the situation worse.

Cooperation and Reliability : Since an establishment's success depends on effective coordination of all staff, a waiter

should aim to help his fellow worker. This implies such conduct as—not being jealous if another waiter has customers who pay higher tips, taking proper turn in the servery line, keeping to rules of the house in spirit as well as to the letter. A cooperative waiter cultivates his ability to get on well with customers and colleagues alike and to further the policies of the management.

Receiving Gratuities : A waiter must never indulge in preferential treatment of customers according to or in anticipation of tips, he may receive from them. Indeed, every customer, irrespective of his financial standing, should be treated alike. Tips should be acknowledged graciously, if placed on the table and should not be removed until the customer has left.

Coordination and Communication: Communication is the means by which problems are diagnosed and decisions are diffused both within the organisation and external to it or is a result of a process of delegations of specific responsibilities and the development of individual objectives.

Communication can also be defined as means of giving information in an attempt to influence someone's activities or as a means of obtaining response for them either in the form of an activity, another communication or a reply. Without communication it is not possible to achieve effective coordination, as without communication no one can know what activities are required to be coordinated.

Nature of Coordination : Coordination is a process whereby work which has been subdivided is brought together and pre-unified into specific tasks or objectives. The need for coordination and synchronisation of the work of individuals is one of the most important managerial activities. Failing to achieve continuous or proper coordination on a continued basis will lead to dissatisfied clients, loss of trade and profit with an unenviable consequences.

Coordination is not periodic activity of management. It must be ongoing. The greater the degree of work the greater the degree of efficiency achieved.

The Nature of Communication : The process requires rendering or receiving a message as a means of transmitting the message. Since communication is a three-way process, some feedback is required. The message may be written or verbal, either in words or figures or in the form of gesture or facial expression.

Feedback may be immediate in the case of conversation or delayed in the case of written matter. It is essential to show whether the message has been received and understood. A willingness to read the part of the receiver is a fundamental process without it, true communication cannot take place.

COMMUNICATION AND ORGANISATION

Downward Communication : This follows a line of command from the point of origin down to the point where action is required through intermediate points in the form of command or orders to be carried out, on the assignment of work to individuals. A GM might issue an edict that all members of staff must improve their standards of personal appearance.

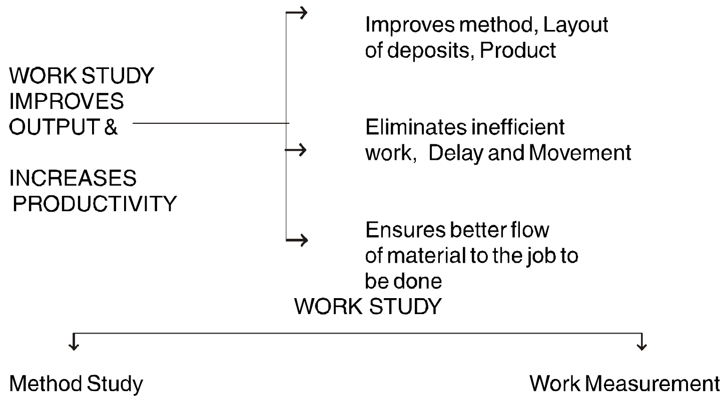
The restaurant manager may decide to re-allocate the table of two waiters and then tell them of his decision.

Upward Communication : This is described as how information is transmitted from the lower region of company to the senior manager. Such information may be a response to a request from management or may be a regular report, passed upward as a matter of routine.

Horizontal Communication : This term indicates communication between employee at the same level in organization namely, those of equivalent status often in different departments.

Work Study : It is a tool or technique of management involving analytical study of a job or operation for the following purpose :

1. The determination of what exactly has to be done, what are the optimum condition methods, layouts, equipment and whether the cause of inefficient work can be removed.
2. The measurement of work content of the job for use in planning, costing and control.



Method Study : The determination of the correct or most effective way of doing a job.

Work Measurement : The setting of a standard time for doing a job.

3

VARIOUS PRESENTATIONS

THE DRINKS

The word ‘Beverage’ has been derived from the Latin word ‘bever’ meaning rest from work. After work one tends to feel thirsty due to fluid loss through perspiration and one is inclined to drink water or other potable beverages. Beverages are potable drinks which have thirst-quenching, refreshing, stimulating and nourishing qualities. By refreshing one means the replenishment of fluid loss from the body due to perspiration. Stimulation results in increase of the heart beat and blood pressure. This is due to the intake of spirits or tea and coffee. Nourishment is provided by the nutrients in the beverages.

Most of the beverages supply energy in the form of sugar or alcohol. They also provide other nutrients like mineral salts and vitamins. For example, milk gives calcium and citrus fruits give vitamin C. Certain beverages like tea, coffee and alcohol stimulate the heart and kidneys, because tea and coffee contain caffeine and alcohol provides as much as 7 calories per 1 ml. Alcoholic beverages affect the central nervous system and tranquilise it, thus reducing tension and worries. Initially alcohol acts as a stimulant, being a concentrated source of energy.

Later on, however, it acts as a depressant. Alcohol being a concentrated source of energy, it is absorbed directy by the bloodstream from the stomach and therefore provides instant energy to the body and increases the blood pressure for a short while. As mentioned above, alcohol is a depressant, because it relieves the blood vessels of the body from tension. Effects of alcohol remain in the body for about 24 hours.

Major Definitions

1. *Alcoholic Beverage :* Any beverage containing 1/2% of alcohol by volume to 76% alcohol by volume is considered to be an alcoholic beverage. Those with higher than 76% alcohol are known as medicines, such as anaesthetics.
2. *Alcohol :* These are hydroxides of organic radicals. Ethyl alcohol is the only alcohol which is consumable. All other alcohols are poison.
3. *Wine :* According to the 'Wines and Spirits Association of Great Britain'— "Wine is an alcoholic beverage obtained by the fermentation of freshly gathered grape juice, the fermentation of which has been carried out in the district of its origin, according to the local traditions and practices. Nothing artificial is added to it."
4. *Brandy :* Brandy is obtained by the distillation of fermented grape juice and is suitably matured in oakwood casks for a minimum of 3 years. Brandies are never coloured because they obtain a beautiful amber colour from the black oakwood casks. Brandies can be matured upto a period of 70 years (usually used for blending purposes).
5. *Distillation :* Distillation is a process of simultaneous evaporation and condensation of a liquid or a mixture of liquids to purify them.
6. *Liquor :* Liquor is used for all alcoholic beverages in general, but it has a special meaning in the brewery, namely, it is water used for brewing after the removal

of unwanted minerals and salts (like calcium carbonate, which forms a precipitate on boiling and spoils the beverage) and addition of required minerals and salts in the manufacture of beer.

7. *Liqueurs :* Liqueurs are sweetened, coloured and flavoured spirits with a base of Cognac, Brandy, Scotch Whisky or sometimes Rum. The colour is obtained from herbs, spices, vegetables or fruit-coloured pigments, either by distillation or infusion. Sweetening is added as and when required.
8. *Whisky :* Whisky is obtained by the distillation of grains, particularly barley malt, and is aged in oakwood casks for a minimum of 3 years for Scotch Whisky, a minimum of 7 years for Irish whisky. Regular Scotch Whiskies are matured for 3-12 years, Premium Scotch or Deluxe Premium Scotch are matured for 12-20 years and the Finest Old 'Blue label' for a minimum of 20 years. Whiskies are coloured by the addition of desired colour caramel. It is distilled either, by the Pot Still method (which gives body) or the Patent Still method (which gives volume).
9. *Rum :* Rum is obtained by the distillation of fermented molasses or sugarcane juice and is matured in oakwood casks for a minimum of 3 years. Rum is coloured by the addition of dark caramel.
10. *Gin :* Gin is a rectified spirit obtained by the distillation of the fermented mash of cereals and grains in a definite ratio. Gin has a typical flavour of juniper berries, coriander seeds and orange peel. It has in all 108 botanicals. Gin is a colourless drink matured in oakwood casks for a minimum of 3 years.
11. *Vodka :* Vodka is the national drink of Russia and goes well with caviar. It is a strong alcoholic beverage obtained by rectifying spirit made from potato and sweet potato starch and is passed through layers of sand, vegetable charcoal, coal and quarts to make it colourless, tasteless and odourless. Vodka is not matured.

Classification and Division

Beverage

Alcoholic — Non-alcoholic

Fermented		**Distilled**	**Compound**	**Hot**	**Cold**
	GRAPES: WINES	GAINS	(a) GINS	Tea, Coffee, Hot	
(a)	Table	(a) Barley malt-whisky	Indian	Chocolate, etc.	
(b)	Fortified	(b) Rye-Rye whisky	Imported (Dutch, English,		
(c)	Soarklinn	(c) Any grain (wheat,	American)		
			corn)-Bourbon		
			(b) LIQUEURS :		
(d)	Aromatised	(d) Potato and Sweet potato starch-Vodka	Sweetened, coloured and flavoured spirits		
SUGARCANE and		They have a base of either			
MOLASSES: RUM		Scotch Whisky		**Aerated**	**Non-aerated**
(a)	Light bodied	Colas, Ginger ale, etc.	or Cognac Brandy.		
		(Cuba, Mexico	LIMCA, SODA		
	Puerto Rico, Phillipines, Brazil				
		Venezuela, Argentina,	(i) Plant liqueurs		
	Peru, Paraguay)		(ii) Nuts liqueurs		
(b)	Full bodied (Barbados		(iii) Fruit liqueurs		
	Hawaii Jamaica, (Guiana)		Cold coffee, nectors, squashes,		

Food Grains: Beers

(a) BARLEY-BEER
- (a) Diet beer (1-1.5% alcohol)
- (b) Light beer (3-5% alcohol)
- (c) Strong beer (8-10% alcohol)
- (d) Draught Beer
  - (i) Light 3-5%
  - (ii) Strong 8-10%

(b) MAIZE-STOUT

(c) WHEAT-ALE

(d) CORN-PORTER

(e) RICE-SAKEY (Japan)
CHUNG (Tibet)

(c) Aromatised (Java, Bulgaria

(d) Imitation rum

FRUITS: BRANDY (from grapes)
- —Apple brandy
- —Cherry brandy
- —Plum brandy etc.

For example: Creme de menthe, Benidictine Curacao, Cointreau , juices, milk-shakes and Ice tea.

(c) BITTERS
- —Fruit
- —Aromatic

Angoustra, Grenadine (From Pomegranate)
Campari (Campari is a bitter as well as aromatised wine. If served as an apertif, if is either served on the rocks or with soda or chilled orange juice)

FRUITS

(a) PEARS-PERRY (1.5-2% alcohol)

(b) APPLES-CIDER (1.5-2% alcohol)

MISCELLANEOUS

(a) HONEY-MEAD

(b) CACTUS or PINEAPPLE-PULQUE

- Imitation rums are made in countries where no sugarcane is available. They are made from spirits flavoured with ethyl biterate.
  1 ml. alcohol = 7 calories.

Non-alcoholic Beverages (Cold)

Aerated Water : These beverages are charged with Carbon-di-oxide gases.

E.g.(a) *Soda Water :* Colourless and tasteless.

(b) *Tonic Water :* Colourless and tasteless.

(c) *Dry Ginger :* Golden straw—coloured with ginger flavour.

(d) Other flavoured waters are :

(i) Fizzy Lemonade

(ii) Orange

(iii) Ginger Beer

(iv) Coco Cola and others.

Non-aerated

Natural Mineral Water/Spring Water : Different varieties of mineral water are :

(i) *Appolianaris :* It is natural sparkling—Germany

(ii) *Contrex :* It is Still—France

(iii) *Perrier :* It is Still Sparkling or in fruit flavours—France

(iv) *Vichy Celestine :* It is Natural Sparkling—France

(v) *Vittel :* It is Still—France

Different Varieties of Spring Water are :

(i) *Ashboure :* It is Still or Sparkling—England

(ii) *Badoit :* It is Slightly Sparkling—France

(iii) *Evian :* It is Still—France

(iv) *Malvern :* It is Still or Carbonated—England

Mineral water has mineral content which is strictly controlled while spring water has fewer regulations apart from those concerning hygiene.

Squashes : The various squashes are Lemon, Mango, Pineapple, Lichi and others.

Juices : Juices can be of two types :

(i) Fresh fruit juices

(ii) Canned fruit juices

Various types of juices available are : Tomato juice, Grapefruit juice, Orange juice, Pineapple juice and others.

Syrups

(i) `Grenadine (Pomegranate)

(ii) `Casis (Black Currant)

(iii) `Citronelle (Lemon)

(iv) `Gommes (White Sugar Syrup)

(v) `Framboise (Strawberry)

(vi) `Cerise (Cherry)

(vii) `Orgeat (Almond)

Non-alcoholic Beverages (HOT)

Tea

Cold Tea/Russian Tea : Chilled tea liqueur or extract of tea leaves. Served with lemon wedges, garnished with mint, sugar syrup.

Tea : Tea liquor served with sugar and milk.

Lemon Tea : Lemon-flavoured tea.

Coffee

Different types of coffee are :

Cafe Brule: A flambe presentation in which a blend of brandy, sugar and crushed coffee beans are ignited in a larger spoon and stirred into the hot coffee.

Cafe Capuccino: Blending chocolate into coffee and topping with Chantilly cream.

Cafe Viennois : Coffee with hot milk topped with whipped cream.

Irish Coffee : Black coffee, sweetened to the guest's taste, is reinforced with Irish Whisky and has double cream floated on top.

Cafe Cream : Hot coffee with cream.

Cafe Au Lait: Coffee with milk.

Cafe Glace : Iced coffee or cold coffee. Coffee served with a scoop of ice-cream.

Tea : Tea is the most popular beverage in India. The best quality of tea is produced by India but the maximum quantity is produced by Sri Lanka.

The leaves come from the plant Camellia Sinesis which is a native of China. It is 2-3 ft. high and looks like a shrub. To prevent high growth, pruning is done after 1 year and the height is never allowed to exceed more than 3 ft. This short growth helps in the growth of more shoots *(i.e.* leaves) and less of wood. It is best grown in cool, humid climates where rainfall is plenty (30" of rainfall). But stagnation of water around the plant should be avoided as it may affect the growth. For this reason, the plant is grown on hill slopes.

Manufacturing of Tea : After maturation of the plant, the plucking is done. The pluckers pluck the top leaves and the flower is called Pekoe.

Approximately 40 kilos of tea leaves are plucked in the first shift (of 8 hrs.). After plucking, all the tea leaves are gathered at one place and sent for the withering process. Here, tea leaves are spread on a perforated rack under the sun for 24 hours or till the moisture content comes down to 50%. During the rainy season, leaves are sent to withering rooms and dried by blowing dry warm air. The next step is rolling. Here, tea leaves are passed through a crusher. There they get ruptured and the juice starts coming out and makes the leaves moist again. Then the fermentation is done. The juice has a substance called Tanin. When it comes in contact with air, it gets oxidised and becomes

deep cooperish red in colour. It takes the leaves 3 hours to get the deep cooperish red colour. Finally, firing is done where leaves are exposed to dry warm air till they have 3% moisture content. The leaves acquire black colour. Leaves are then packed and sent for sale. This whole process of making black tea is called the orthodox method. South-Asian countries are famous for producing good grade black tea.

Another type of tea is the Green Tea. It is manufactured in Laos, Indonesia, Burma, Malaysia, China and Japan. It is unfermented tea. After plucking, tea leaves are withered, steamed and then fired and packed. No fermentation is done during its manufacture.

Oolong Tea is another type of tea made in Taiwan. It is semi-fermented tea. During the plucking process, tea leaves are snapped into two, and because of this, a little bit of tanin starts coming out and hence oxidation occurs. Then the leaves are withered and fired.

Tanin contributes to the thickness and flavours of tea. Black tea has a thick consistency but is not very well flavoured. Green Tea has a medium consistency but has the best flavour. Oolong Tea has a watery consistency and is medium-flavoured. The concoction also depends on rolling. The bigger the size of tea leaves, the weaker will be the crushing and hence extraction.

There are 2 methods of rolling :

C.T.C.—Cut-Tear-Curl : Here, the two cylinders have grooves on them. When the leaves are passed through these cylinders, the leaves not only get cut and torn but they also get curled. CTC reduces the fermentation time to 1/3. It is the best method but it can not be applied to Green tea and Oolong tea.

Leg Cut : Here, the leaves are shredded into strips. Therefore maximum tanin comes out and fermentation is very quick.

Coffee : Coffee is a natural product grown in many countries of the tropical and subtropical belt in South Central America,

Africa and Asia. It is grown at different altitudes in different basic climates and in different soils and is looked upon as an international drink consumed throughout the world. Brazil is the world's largest grower of coffee, Columbia is the second, and the Ivory Coast and Indonesia are third and fourth respectively.

The rising popularity of coffee over the past few years may be attributed to the fact that nowadays more and more people spend their holidays in the Continent. Coffee is the Continent's most popular drink and therefore is one of the first habits that tourists pick up abroad.

The trees which produce coffee are the Genus coffee which belongs to the Rubiaceae family. Out of the 50 different species, only two of these are commercially significant. These are known as Coffee Arabica and Coffee Camephora which is usually referred to as Robusta. Arabica accounts for some 75% of the world production.

The coffee tree is an evergreen shrub which reaches a height of 2-3 m when cultivated. The fruit of the coffee tree is known as the 'cherry' and they are about 1.5 cm in length and have an oblong shape. The cherry usually contains two coffee seeds. The coffee tree will not begin to produce fruit until it is 3-5 yrs old and it will then usually yield good crop for about 16 yrs.

Coffee plants require the following conditions for growth : (i) High humidity (ii) Plenty of rainfall (iii) Cooler climate (iv) Care is taken so that water does not stagnate around the plant.

The Blend : Companies who sell coffee have their own blending experts whose task it is to ensure that the quality and taste of their particular coffee brand is consistent, despite the fact that the quality of imported beans does vary from shipment to shipment.

Most brands of coffee sold in shops are in fact a blend of two or more batches of beans. Because they have no smell or

taste, green beans have to be roasted in order to release the coffee aroma and flavour. The correct roasting gives a uniform colour. The output of different roastings are used to form different blends.

The Common Degrees of Roasting are :

Light or Pale Roasting : Suitable for mild beans to preserve their delicate aroma.

Medium Roasting : Gives a stronger flavour and are often favoured for coffees with well-defined character.

Roll Roasting : Popular in many Latin countries and have a bitterish flavour.

High Roasted Coffee : A strong bitter coffee, although the original flavour is lost.

Commercial coffee roasters can either convert the beans into instant (soluble) coffee or prepare them for sale as roasted or ground beans. When roasted the degree of acidity is less and the bitterness is more in the coffee.

Roasted coffee must be ground before it can be used to make the brew. Coffee is ground to different grades of fineness which suit the many different methods of brewing. The most suitable grinds for some common methods of brewing coffee are :

Method	***Grinding Grade***
Filter/Dip	Fine to medium
Jug	Coarse
Turkish	Medium
Cafetiere	Medium
Vacuum infusion	Medium fine to fine
Espresso	Very fine
Percolator	Medium

Processing of Coffee : The fruit of the coffee plant is called cherry. It has a pulp and two flat seeds inside. Two following methods are used to separate the seeds from pulp :

Fermentation Method : The fruit is dried under sun so that the pulp dries up and the seeds can be removed.

Frying Method : The fruit is allowed to ferment till the pulp falls off and seeds are separated.

In both the cases, one gets coffee seeds. These are freshly roasted and then grinded immediately. The coffee seeds are then roasted at 150°C by hot dry air to give the required colour to the seed. The colour of the roasted seeds are important factors. When the desired colour is achieved, a calculated amount of cold water (to arrest further roasting) is added. This process is called Quenching. Then the coffee is grinded and the degree ranges from fine powder to medium to coarse powder. This is called processing of coffee.

Types of Coffee : There are 3 types of coffee available in market :

Arabica : It is the best quality available. It is available in the finest quality. It is grown in Brazil, Paraguay, Coloumbia, Mexico and India. The crop is very fragile hence the yield is very less. So it is very expensive.

Robusta : The quality is medium, taste and flavour-wise. The yield is far better. It is grown in the West African coast specially in Ghana.

Liberica : It is the cheapest brand of coffee available. It is grown in Malaysia.

OTHER TYPES OF COFFEE

French Coffee : In this type of coffee, the coffee seeds are mixed with chicory. The commonly used one is Chicory (Endive plant). It is the root of Endive Plant. It is roasted along with coffee seeds and then powdered. In India, it is available as the ‘BRU’ Coffee.

Henna Coffee : It is an Austrian coffee. Figs are roasted along with coffee seeds and then powdered. Then they are mixed with boiled water and served with or without milk.

Coffee Pona : It is filtered very finely.

Coffee Espresso: It is steamed coffee with a thick layer of froth which is sprinkled with cocco powder. When cinnamon powder is spinkled then it is called Capuchino coffee. *E.g.* Cappucino, Coffee Italiano.

Hawaiian Coffee : Black cold coffee with pineapple juice and cream.

Turkish Coffee : Mostly used in the Middle East. Coffee is brewed with very little water with few grains of potassium permanganate in a copper pan. Very strong coffee and copperish red in colour.

Irish Coffee : It is coffee liquor mixed with Irish whisky and whipped cream is poured on top to form a layer.

Instant Coffee : Coffee powder mixed with boiled water and served with or without milk.

Cona Coffee : Coffee made from freshly crushed roasted coffee beans and is prepared in a Cona Coffee apparatus. Very strong coffee served with milk and cream.

Cocco and Chocolate : The best cocco is produced in Assra (in Ghana). 70% of the world's production is done in Ghana, about 24% production is from Brazil and 63% from South West Asia.

Cocco Pod is a big fruit of size 12" x 4" diameter. It has 20-40 seeds. It is used in the manufacture of cocco and chocolate.

Processing starts with fermentation of the fruit. Fruit is fermented so that the pulp leaves the seeds. This produces acetic acid which gives a bitter taste and a brown colour to the cocco products. The seeds are sent for winnowing so that the outer seed is removed and the nib is obtained. It is then treated

with alkalines. In presence of alkalis, the seeds develop a typical brownish colour and strong flavour. This is called the Dutch Process. Then the, nibs are crushed (Rolling Process). The rolling or crushing of nibs produces cocco which has 50% cocco and 50% cocco butter. This cocco can be used in two ways.

For preparation of chocolate, cocco mass is mixed with sugar and with butter, then heated to 60-70°C and churned at a high speed to get the chocolate which is used for finishing of cakes, candies and other commercial food or products. Milk chocolate is manufactured by adding milk powder and cocco butter to the chocolate. The cocco mass is compresed in hydrolic machines to separate into cocco powder and cocco butter. By hydraulic pressure, the fat is separated. This cocco butter can further be used for making imitation chocolates. Cocoo butter is mainly used in cosmetics.

Breakfast (Petit Dejeuner) : The word Breakfast means to break the fast after a long time. It originally started in England where they used to have a lot of courses. The different types of breakfasts are :

1. Continental
2. American
3. English

Continental Breakfast or Cafe Complet or the Complet : This breakfast is an European Breakfast. It comprises of :

I. *Choice of Juice :* Mango juice, Pineapple juice, Tomato juice, Orange juice or Grapefruit juice etc.

II. *Choice of Breads :* Toast (white bread/Brown bread), Rolls, Croissant, Brioche, Muffins, Doughnuts, Danish Pastry served with preserves, Jam, Honey, Marmalade and butter.

III. *Tea/Coffee :* If tea is served with this breakfast, it is known as The Complet. If coffee is served along with this breakfast, it is known as Cafe Complet.

Cafe Simple or The Simple : If the guest orders only coffee then it is called Cafe Simple. If the guest orders only tea it is called The Simple.

Cutlery Required for Continental Breakfast: A side plate or quarter plate with side knife, butter dish with underliner and butter spreader, toast rack, tea /coffee pot, sugar bowl, milk pot/ Creamer.

American Breakfast

It Starts with a Glass of Cold Water : Consists of the Table d'Hote breakfast Menu which one would generally find in the menu card of any 5 star hotel.

Choice of Juice : Mango, Pineapple, Tomato, Orange, Grapefruit.

Cereals : Choice of cornflakes, oatmeal, porridge, rice crispies, wheat flakes served with cold or hot milk.

Eggs to Order: Scrambled, poached, boiled, Omelette, served with bacon, ham or sausages.

Choice of Breads : B/F Toast, rolls, Brioche, croissant with preserves like batter, jam, marmalade and honey.

Or

Choice of Indian Breakfast: Puri Bhaji or stuffed Paranthas served with curd, idli, wada/uttapam/dosa/upma served with sambar.

Tea or Coffee

Beverages : Tea, coffee or hot Bournvita, Horlicks, Ovaltine.

English Breakfast : An English breakfast is a very elaborate breakfast. It comprises of ten courses.

Choice of Juice : Pineapple, Tomato, Grapefruit, Orange, Mango etc.

Stewed Fruits : Apples, Prunes, Figs, Pears etc. are cut into small pieces and cooked in sugar syrup flavoured with clove

and cinnamon. It is served in a cocktail cup with a quarter plate as underliner and the cutlery provided is a teaspoon.

Cereals : Oatmeal (meal), cornflakes, wheat flakes, rice crispies, porridge are served with cold or hot milk in a soup bowl with a quarter plate as underliner and a dessert spoon is provided as cutlery.

Fish : Herring, Haddock, Kedgres, Sardines, are served.

Eggs to Order : Omelette, boiled eggs, scrambled egg, poached or fried eggs.

Meat: Grilled Bacon, Sausages, Ham, Salami, Kidney or Liver, are served.

Choice of Rolls or Toast: Toast white or Brown or Rolls—like Croissant, Muffins, Brioche, Doughnuts, Danish Pastry are served.

Butter and Preserves : Butter, jam, honey, marmalade, maple syrup etc. provided.

Fruits : Fresh fruits like melon, papaya, mango, orange, grapefruit, pears are served in this course. (When in season)

Beverages: Tea/Coffee or hot beverages like Bournvita, Milo, Horlick, Ovaltine, Cocco etc. can be served.

French ***Petit Dejeuner***	***English*** ***English Breakfast***
Jus de Tomate	Tomato juice
Jus de Pamplamousse	Grapefruit juice
Jus d'orange	Orange juice
Jus d'ananas	Pineapple juice
Compote des Fruits	Fruit Compote
Compote des Figues	Figs Compote
Compote des Pommes	Apple Compote
Flacon de Mais	Cornflakes

Contd...

French ***Petit Dejeuner***	***English*** ***English Breakfast***
Flacon de Ble	Wheat flakes
Souillie d'Avoine	Oatmeal Porridge
Bouillie de Ble	Wheat Porridge

Oeufs Aux Choix (CHOICE OF EGGS)

Mollet	Soft			
Poche	Poached	Jambon	Ham	
Dur	Hard-boiled	Lard	Bacon	(Avec-with)
Brouille	Scrambled	Jaucisse	Sausage	
Frit	Fried			
Hareng Grilles	Grilled Herrings			
Rognon Grille	Grilled kidneys			
Foie d'Agneau		Lamb's Liver		
Au Lard		with bacon		
Ris d'Agneau		Lamb's sweet bread		
Pain Grilled		Toast		
Petit Pain		Bread Rolls		
Confiture	—	Jam		
Miel		Honey		
The		Tea		
Café		Coffee		
Chocolate		Chocolate		
Cacao		Cocco		
Pamplamousse		Grapefruit		
Melon Frappe		Chilled melon		
Demi Pamplamousse	Half grapefruit			
Corbeille de Fruits		Fruit basket		
Fruit Frais		Fresh fruit		

INTOXICATING STUFF

Generally tobacco means a leaf product containing 1-3% of the alkaloid nicotine which produces a narcotic effect when smoked, chewed or snuffed. The plant N Rustica provides tobacco in parts of Europe, but the tobacco of world commerce is N.

tabacum. During his voyage to America Columbus discovered the West Indians smoking tobacco in a hollow forked stick. Historians do not know who first brought tobacco to Europe, but most of them give credit to Jean Nicot in 1561. Nicotina and Nicotine incorporate his name.

Main Features : Solaneceous Annual, Alternate, Sessile, Oval or Lanceolate leaves. Rowers produced in a panicle.

Cultivation, Harvesting and Curing : The local soil type and climate within the country, or state determine the type of tobacco grown there. Generally tobacco grows best in warm, even climate on light, well-drained, carefully fertilized soils, that receive weekly moisture from rain or irrigation. Special seedbeds, either open or covered with cloth, glass or plastic provide transplants for the fields. Plants are usually topped (blossom removed) to allow the upper leaves expand. Harvest proceeds by cutting the whole stock or picking leaves successively as they ripen (primed). Primed leaves are supported on strings, wires or sticks. Curing (drying) is done in ventilated barns with natural or artificial heat. In some areas, machine harvested leaves are packed in special frames for curing in heat regulated, forced-air chambers.

Drying time (2-6 weeks) and temperature (70-170°F or 21-77°C) influence the amount of changes that occur in proteins, carbohydrates, organic acids, alkaloids and enzymes in the leaf. Before inserting the leaves in cigars, cigarettes, pipes, chewing tobacco or sauf, lined leaves are fermented by storing them for 6 weeks to 2 years at about 15% moisture and 80-110°F (27-43°C). The methods used for harvesting, curing and fermenting depend on the type of tobacco, intended use and local custom. A flat product made from ground up tobacco plus binding agents is often blended with tobacco leaves.

Economic Importance : Tobacco is economically important in 66 countries and is grown to some extent in all but a few countries.

Diseases Caused : Diseases cause production problems in all countries where tobacco is grown. Annual losses of tobacco products worldwide average 10% or more; in addition, production costs invariably increase. About 25 principal pathogens attack the crop right from the seed sowing stage to marketing. Root knot, caused by the Nematode Meloidogyne sp. is the most important disease. It occurs in all the warmer countries, particularly in sandy soils. Diseased plants are stunted and have wilted leaves that yellow prematurely. Knits or galls form on the roots. Infected plants become more susceptible to other diseases such as black shank and bacterial wilt.

Cigars : Cigars are formed by using three types of tobacco leaves :

Fillers : These are broken/crushed leaves which forms the centre of the cigar.

Binders : These are the leaves which are small in size and are bound around the filters.

Wrappers : These are the big leaves which are quite soft and elastic in nature so they can be wrapped to give the final smooth surface. The best wrapper leaves are found in flavours and these are grown in shade.

In order to bind all these leaves together, a special type of glue is used in manufacturing cigars and cigarettes. The leaves of tobacco are taken and put in bundles and then heated and cured by subjecting them to fire which helps in making the leaves sort of brittle in nature and increase the preserving quality. The bundles are then opened up and graded and used for the particular cigars. Cigars are usually made by hand but nowadays rolling is also done with the help of machines. The cigar should not be dry, some moisture should be there in order to have full satisfaction and should be stored in cedar wood boxes as they allow that much quantity of air and moisture which can maintain the quality of cigars.

Types of Tobacco

Type	***Major Production Area***	***Use***	***Curing Method***
Flue-cured (bright)	United States (Virginia, North Carolina, South Carolina, Georgia Florida border); Canada (Ontario); Europe; China; Japan; Australia; India	Cigarettes	Primed leaves heat-cured to a bright yellow colour —
Light air-cured (Burley,	U.S. (Kentucky, Mary land, Tennessee); Canada, Europe Maryland)	Blending in cigarettes	Whole plant air dried in ventilated sheds
Oriental (Turkish)	Greece (Macedonia), Turkey (Samson)	Blending for aroma in cigarettes	Primed leaves cured in sun on strings.
Cigar filler	Cuba; Phillippines; Puerto Rico;	Central bulk of cigars	Whole plant air dried in ventilated sheds
US(Pennsylvania, Ohio);	Dominican Republic, Central and South America		

Contd...

Type	***Major Production Area***	***Use***	***Curing Method***
Cigar binder Valley, Wisconsin,	US (Connecticut River filler into Pennsylovania)	Binding the shape.	Same as above
Cigar Wrapper Valley, Georgia	Under Clotheshade; US (Connecticut River cigar Florida border); Cuba; Italy; new in Canada & South America	Outer leaf or wrapper of uniform golden	Primed leaves heated or air dried to a brown or a bright green.
Dark air cured and fire cured	US (Kentucky, Tennessee, Virginia) snuff	Pipe, chewing sheds.	Whole plant air dried in ventilated

Strength

1. C Means Colorado—a dark and strong cigar.
2. C.C. Means Colorado Claro—medium cigar.
3. C.C.C. Means Claro—a light cigar.
4. C.M. Colorado Maduro—a very strong cigar.
5. M. Maduro—an exceptionally strong cigar and darker in colour.

Common Cigars

— Esquitos (in tubes)

— Hebeaneoros (in tubes)

— Club No. 4

— Cafe Creme Corona

Casings (sweetening agents) are added to give flavour to the cigarettes. Snuffs are made by fermenting the fire cured leaf and grinding stems and adding salt and flavourings. Cigars are made by wrapping a blinder leaf round a bunch of cut filler leaves and overwrapping with a fine wrapper. Stems and scraps are grounded down to make reconstituted sheets something like the paper-making process which can be used as substitute cigar binders or wrappers. These are also used to supplement natural tobacco in cigarettes.

Names and Sizes of Cigars

1. Corona—A 9 inch long straight cigar with a round end. It gives a slant cut or cut with a cigar cutter in V-shape.
2. Petit Corona—Same shape, 5 inches long.
3. Tres Petit Corona—4½” long/ same shape.
4. Half Corona—3 ¾” long.
5. Lansdale—The strongest cigar, 6 ½” long.
6. Ideals—Torpedo shape cigar 6 ½” long.
7. Bouquet—Small torpedo shape, $4\frac{2}{3}$" long cigar.

8. Panatella—It is opened from both the ends. 3" long with a golden foil to show from which side to smoke.
9. Churoot—Smaller cigar but bigger than bidis and darker, they are tapered at the stroking end and are 6 ½” long.
10. Whiffs—English cigar open at both ends, 3½".

Cigarettes : These have long thread-like, shredded tobacco prepared by using machines which are capable of manufacturing 10,000 cigarettes in a minute.

These are never individually made but there is a long cigarette paper in which tobacco is placed and the paper is glued and then cut accordingly and the filter is inserted at the end which has a diameter longer than the cigarette but has been compressed and fitted on the end with a golden brown paper covering.

Filter : This helps in reducing the amount of nicotine that goes along with the smoke to the person’s body and is made up of cellulose fibres which are very fine.

There are certain cigarettes like Phillip Moris which have a double filter namely, regular filler and triangles of charcoal.

Synthetic filters are also being used in order to fight the competition in the market like ‘Charms’.

Virginia Tobacco : This is the best and the different cuts available are Navy, Silk, Flake and Fine Cut.

How to Judge a Good Cigar : Basically, before they come into the market they are judged by an expert team of connoisseurs. But if a person wants to judge then the foremost point is the reputation of the Company and goodwill, and not an attractive box or packing. It’s odour, flavour, aroma, taste should be checked which can be done by smelling and smoking.

Colour of the Ash : It should be dark greyish, firm and should not fall on its own. The longer it stays the better it’s quality is.

Cigars, if taken near the ear and rolled with the hands, produce cracking sounds when dry and means that the cigar are of poor quality.

Older Cigars : You can see spots on the cigar.

Cigarettes : These can be stored for a period of 6 months after which yellow spots appear on the paper and they have a sweet taste when puffed.

Hukka : Desi tobacco is used.

Pipes : Flecked tobacco is used.

Brands

American : Camel, Pallmall, Cheterfiled, Kent.

English : Thon Player's Special, 555, Dunhill, Benson and Hedges.

Mentholated : Cool, Salam

Double Filtered : Phillip Moris (Charcoal and cotton/silk filter)

Internationally Famous Cigars

American	—	Robert Burns
Cuban	—	Romeo Juliet
Danish	—	Ducados
Holland	—	Ambapsado, Rothman's—120 m.m.
Dutch	—	Corona delux, Diplomat
Jamaican	—	Corona delux, Diplomat (delux)
Indian	—	Bengal Tiger

Usually all cigars are derived from N. tobacom except for air-cured Khorka (USSR) which is derived from N. rustica. Its leaf has a coarse texture, it has Nicotine and has citric acid of a higher level than lemon.

Culture

Seeds : The choice of seed is contingent upon the type of leaf desired. Most strained varieties of N. tobaccom are local in their adoptions and are not suited for the production of widely divergent leaf.

Orinoco Group : In production of Flue-curing tobacco.

Pryor Groups : In production of dark, air-cured and fire-cured tobacco.

Havana Seed, Sumatra, Luban represents outstanding varieties used in the production of cigar leaf.

Specification of Seeds : Seedlings are small and are produced in cold farms or outdoor beds covered with thin cloth or something like a straw bed.

Specification of Soil : Soil which is selected should be :

1. Fertile
2. Have good tilth
3. Drainage
4. Be fully exposed to sun

Sterilisation of soil iodine by burning, steaming, using chemicals, such as methyl bromide to destroy used seeds, nematode insects etc. is done 8 to 10 weeks after transplanting the field.

Shortly after the flowering, it is topped (disbudded) that is, the terminal growth is removed. Leaves are large and vary from 10-20 in number. Burley, dark air-cured, fire-cured, cigar requires silt loam, clay loam with clay sub soils.

Oriental: Unfertile sandy hill slopes.

Flue-cured : Heavy black clay-like soil.

Use of Fertilisers : NPK Fertiliser are used one ton per acre and can vary in small quantities.

Disease of the Plant

1. Pusarium Whilt
2. Black Root Rot
3. Tobacco Masaic Virus
4. Bacterial Leave Spot
5. Downy Mildew

Insect Pests

1. Green June Beetle Larvae
2. Cutworms
3. Flea Beetles
4. Horn Worms
5. Grass Hoppers
6. Nematodes

These are controlled by various methods including fumigation. The harvesting time is 70-140 days.

Effects of Tobacco : Tobacco can affect the health. Passive smoking places unborn children at serious risk. Smoking and chewing of tobacco can also lead to cancer. It is also bad for lungs and heart. Research has found that smoking mothers account for 50,000 miscarriages in the US each years, the culprit being Nicotine. Premature deliveries are also associated with this.

THE SHOPS

One method of classifying food and beverage outlets is outlined above. The basis of this classification is the distinction between commercial catering on the one hand and subsidised or welfare catering on the other. In the case of the former a further distinction is made between those outlets which serve a restricted market and those which serve the general public at large. In the case of the latter a distinction is made between institutional catering and employee catering.

There are two reasons for using this classification here. First, it provides a very broad coverage of food and beverage outlets-broader, for example, than many of the official definitions and classifications of the hotel and catering industry. The 1968 Standard Industrial Classification (SIC), for instance, excludes from the hotel and catering industry, all subsidized catering unless operated by a catering contractor as well as take-aways. The exclusions from the 1980 SIC are much less but it still excludes much of the employee and institutional catering.

The second reason for using this classification is that it is based on distinctions which have a significant bearing upon most aspects of the operation of the catering activity. For example, the difference between subsidized catering and commercial catering not only embraces differences of objectives but also covers differences in markets served, differences in organizations involved and differences in marketing and business strategy.

Based on this classification, the aim of this chapter is to list out the different types of food and beverage outlets and to identify their main characteristics. This then serves as a basis for a consideration of issues of relevance to food and beverage service in general.

Major Commercial Sectors : Commercial food and beverage outlets may be defined as those operations in which profitability is the primary concern. Such outlets exist not only in private ownership but also in the publicly-owned sector of the economy where, for example, the British Railway seek to operate their catering outlets on commercial lines. Also, it is worth noting that in the commercial sector, catering may be the main activity of the organization or company or it may simply be a secondary or additional service to customers, for example, catering in departmental stores or theatres.

A broad distinction can be made between catering for a restricted market and catering for a general market. In the case of the former the market can be restricted in a number of ways:

by way of membership criteria as in the case of catering in clubs or by the fact that the catering is only available to those engaged in a specific activity as in the case of transport catering or employee catering. Clearly, there will be some overlap in a few cases. For example, catering at a railway station is normally open to the traveller as well as to the general public.

Commercial Catering for General Market : The provision of food and beverage facilities in hotels ranges from the self-services style often adopted for specific meal periods by transit or motel-type hotels, to waiter silver service used by luxury and resort hotels. In the latter establishments, the food and beverage facilities are usually presented as one of the many features of the hotel because the guests may be staying at the hotel for some time rather than just a night or so as may be the case in transit hotels. The types of food and beverage found in hotels include silver service restaurants, licensed bars, coffee shops and snack bars, and buffet restaurants, room service and banquet facilities. Some of these facilities are only available to hotel residents, or 'In-House trade', for example room service; while the others, for example banquet, coffee shops and other restaurants, are advertised outside the hotel in order to attract outside customers.

COMMERCIAL CATERING

Transport Catering : Transport catering *(i.e.* road, rail, air and sea) has a number of characteristics not commonly associated with other food and beverage outlets. It usually involves the feeding of a large number of customers arriving together at a catering facility, and who need to be catered for in a specific time period, *e.g.* on board a plane. Sufficient food and beverage supplies are usually carried for a specific number of meal periods, as, if for any reasons this food cannot be served to customers, alternative supplies may not be readily available. The service of food and beverage may be particularly difficult due to the physical conditions within the service area

e.g. turbulence on board a plane. Finally, there are the problems of staffing these food and beverage facilities; the extra costs involved in the transportation and service of the food and beverages; space restrictions and the problem of security whilst the operation is the transit.

Four main types of Transport Catering may be Identified:

Road : Road catering has progressed from the inns and taverns of earlier days used by those travelling on foot and horseback to the present-day motorway service areas situated along the motorways which traverse the country. These service areas are open twenty-four hours a day and have a particular problem of staffing as some employees have to be brought to and from work over a distance of twenty to thirty miles. Also because of their isolated locations, the hours they are open, and the sheer volume of numbers involved at peak periods, these service areas are also particularly prone to vandalism and littering. They do, however, provide a valuable catering service to the travelling public and the food and beverage facilities usually include self service and waiter service restaurants, vending machines and take-away food and beverages.

Rail : Rail catering may be conveniently divided into two major areas namely, terminal catering and in-transit catering. Catering at the railway terminals usually comprises licensed bars, self-service and waiter service restaurants, fast food and take-away units, supplemented by vending machines dispensing hot and cold food and beverage. In-transit, catering basically consists of two main types of service. The first is the Restaurant Car service where breakfast, lunch and dinner are organized in sittings and passengers go to the Restaurant car for service where appropriate seating accommodation is provided. The other type of service is the Buffet Car which is a self-service operation in which passengers can go to the car and buy light refreshment over the counter. Such traditionally organized catering facilities are, however, no longer suitable for the latest

development in rail travel which include the Advanced Passenger Train (APT) and the High Speed Train (HST). These trains demand a very streamlined and compact catering service which can provide the customer with food and beverage very quickly. The adoption of the airline service style has been suggested for these new fast trains, and it may be that some thing along these lines will be adopted in preference to the more traditional forms of catering, which are not able to cope as efficiently with the catering demands of these new fast speed trains.

Air : Airline catering has increased and developed considerably over the past twenty-five years. It originally consisted of sandwiches and flasks of tea, coffee and alcoholic beverages, but the progression to today's full and varied service is on par with that of aircraft development itself.

Like the Railways, Airline catering falls into two main areas: Terminal catering and 'In-transit' or 'In-flight' catering. Food and beverage outlets at air terminals usually consist of self-service and waiter-service restaurants, supplemented by vending machines and licensed bars. The in-flight catering service varies considerably with the class of travel, type and duration of flight, etc. At one extreme, the food and beverage portions are highly standardized with the meals portioned into plastic trays which are presented to the passengers and from which they eat their meals. Disposable cutlery, napkins, etc. are used which reduces the facilities necessary for washing-up and also cuts down on breakages and wastages. At the other extreme there is virtually no portion control; service is from a gueridon trolley, food is portioned in front of the customers and any garnishes, sauces, etc. added according to their requirements. The crockery used may be bone china and this combined with fine glassware and cutlery creates an atmosphere of high-class dining.

A characteristic of airline catering is that this service is often contracted out to a specialist catering firm, which may be supplying a similar service to many airlines.

The provision of a catering service in air travel is normally inclusive in the price of the fare and a particular feature now is the cable service facilities by the different airlines. The increasing use of airlines as a common mode of transport has made competition fierce, and the area of food service is now a particularly competitive aspect of the total service offered by an airline.

Sea : Sea or marine catering varies from the provision of food and beverages on the short sea-route ferries where the catering service does not often feature prominently, to the large cruise or passenger liners where the catering facilities are an important part of the service offered by the shipping line, and are usually included in the price of the fare.

On the cruise liners the standard of catering facilities is high because they are an important sales feature in a competitive activity. On the short sea routes, however, price is usually the more important factor and because of the necessity to feed large number of people the catering service provided is usually of the popular and fast-food type.

Clubs : Clubs, as a sector of the hotel and catering industry, are establishments offering food and drink, with at times accommodation, to members and bonafide guests. The types of clubs varying from working men's clubs, to political party clubs, social clubs, sporting clubs, restaurant clubs, to the private exclusive clubs.

Basically, in England and Wales, clubs are of two main types:

Proprietary Clubs : These are licensed clubs, owned by individuals or company and operated by themselves for self-profit, and as such require a Justice's Licence to operate. It is usual for a high proportion of proprietary clubs to resemble licensed restaurants with a substantial part of their turnover obtained from the sales of food.

Registered Clubs : These are registered clubs in which the management is responsible to an elected committee; the members own all the property including the food and drink, and pay their subscriptions to a common fund. As a non-profit making club which belongs to all the members and provides a service to the members, it is a genuine members' club and does not require a Justice's Licence to operate.

It requires to be registered. The turnover of the members' clubs is mainly obtained from the sale of drinks which are normally sold at a competitive price as the profit element in clubs is lower than say in public houses.

Function Catering : Function catering may be described as the service of food and beverage at a specific time and place, for a given number of people, at a known price. Examples of function catering include social functions, such as wedding, dinner dances, business functions such as conferences, meetings and work lunches; and those functions that are organized for both social and business reasons such as outdoor catering at a show or exhibition.

Function catering is found in both the commercial and non-commercial sector of the catering industry. In the commercial sector, function catering is a specialized organization operating in its own function facilities or as an outdoor-catering specialist operating in the clients' facilities or rented facilities or as a separate department within an hotel.

In the non-commercial sector, function catering is rarely the primary reasons for providing the establishment with catering facilities. Such establishments include hospitals, schools, industrial cafeterias, etc.

where the functions are not usually organized on a purely profit basis as they are in the commercial sector, but rather to serve a specific need of the organization. Typical examples would be Diwali functions, retirement parties, fund-raising events, etc.

Restaurants and Snack Bars : Unlike the hotel facilities commercial restaurants do not offer accommodation and therefore their primary function is the provision of food and beverage. Because these restaurants do not have any in-house trade they are very reliant on passing trade and the reputation they develop from word-of-mouth advertising.

The various types of restaurants include snack bars, cafes, coffee shops, take-aways, steak bars, speciality restaurants, hot cuisine restaurants, etc. These diverse types of restaurants have service-styles, ranging from the self-service catering to the more elaborate methods of table service (*e.g.* French, Russian, English) found in luxury restaurants, and those particular service techniques specific to speciality restaurants such as Chinese, Polynesian and Indian.

In many restaurants today separate bar areas are provided for pre and after-meal drinks. These have the double advantage of offering the customer a place to sit and relax away from the dining area and they allow a faster seat turnover in the restaurant.

Fast Food and Take-away : This sector of the industry is concerned with the preparation and service of food and beverages quickly for immediate sale to the customer for consumption either on or off the premises. Examples of fast food and take-away operations include the many themed hamburger units found in the high streets of most of the cities today, as well as operations such as fish and chip shops.

There are several identifiable characteristics common to this sector of the industry. Like,

(a) The units are usually themed around a product *(e.g.,* Hamburgers), a range of products *(e.g.* fish), or products of a country *(e.g.* Chinese).

(b) The units are often owned by large chains or are franchised.

(c) The 'Product' is very well-marketed, through the themed

product, the decor and atmosphere, the high and consistent standard of the product, advertising on television, local radio and newspapers, and the container boxes for takeaway items.

(d) The pricing of the items is within a fairly distinctive known price range.

(e) The commodities used are often of the convenience type *(e.g.* frozen chips, concentrated beverage syrups).

(f) The method of food production is often partially or fully automated thereby de-skilling the job.

(g) The method of food service is simplified and basic.

Public Houses : Public Houses consist of a varied group of establishments, which mainly offer the general public alcoholic liquor for sale for consumption on and off the premises. The supply of food, at one time ancillary to liquor, has been seen more in recent years as a very important element in the 'product' for the consumer.

The characteristics of public houses are, firstly, that they all require a licence to operate and that the licence is only granted to suitable persons, and secondly, that most public houses are owned by a brewery company, providing an integration of their production with the retail distribution of alcoholic beverages.

In order to become more competitive, to meet customers demands, the catering premises in most pubs have improved considerably in recent years. Some brewer companies have classified their public houses by the level of catering offered. This ranges from those offering just sandwiches to hot and cold snacks, to a cold buffet counter, to a bistro-type operation, to a griddle or steak bar to a full a la carte menu. The range of food items offered mainly being of the convenience food type but at times extending to fresh food items. Several brewery companies market specific pubs, by the type of catering offered, with a brand image, *e.g.* Beefeater Steak houses.

Major Welfare Sectors : Subsidized or welfare food and beverage establishments may be defined as those operations in which the profitability of the catering facility is the outlet's primary concern. Since the operations are either completely or partially subsidized by a parent body, such establishment's primary obligation is the well-being and care or their customers or patients.

Unlike customers frequenting commercial sector operations, these customers often do not have a choice of catering facilities, for *e.g.* in hospitals and schools. Non-commercial operations are usually subsidized by government bodies which dictate an allowance per head, or by parent companies who may have a similar arrangement.

A distinction can be made between institutional catering and employee catering facilities, *e.g.* in hospitals and schools. Non-commercial operations embraces catering in institutions such as prisons, schools, hospitals. An important characteristic of this type of catering is that the market is not only restricted to the inmates of the institutions but in most cases it is also captive. In addition, in most cases, institutional catering is completely subsidized.

Employee catering may be in the public or private ownership and covers the provision of food and beverage services to employees. The degree of subsidy in this type of operation varies considerably and also in many cases the market is not entirely captive. In other words, the catering outlet may be competing with the catering facilities provided at nearby restaurants, pubs and take-aways or with food brought in by the workers from their homes.

Institutional Catering : Institutional catering establishments include schools, universities, colleges hospitals, the Services, and prisons. In some of these establishments certain groups of customers do not have to pay for the provision of the food and beverage services as they are completely or partially

subsidized by various government funds. This part of the catering industry is commonly referred to as the welfare sector. Very few catering contractors are found in this sector so the majority are self-operated.

Schools : The school meals catering service was until recently structured on a dietary basis with a daily or weekly per capital allowance to ensure that the children obtained adequate nutritional levels from their meals. Most of the schools used to operate their dining rooms on a family-type-serve or a self-service basis with the traditional 'Meat and two veg' lunch being very much the norm. There is today, however, a trend of provision of a snack-type lunch as an alternative to a main meal.

Some schools now provide sandwiches, rolls, pies, soups, yoghurts, etc., and the children may choose from this selection. This trend has gone one step further in some areas which have drastically cut their school meal service and are providing more of the dining room space for the children to bring in their own lunches from home. Whether this trend will continue and spread in the future, or whether it is merely a current 'fad' is a debatable issue. It does seem likely, however, that now introduced, the snack-type meal will at least remain as an alternative to the traditional school meal.

A further trend since 1983 has been for some local education authorities hire specialist contract caterers.

Universities and Colleges : The public sector universities and local education authority institutions such as polytechnics, colleges of education and colleges of further education provide catering facilities for the academic, administrative, technical and secretarial staff as well as for full-and part-time students and visitors. The catering service in this sector of the industry suffers from an under-utilization of it's facilities during the three vacation periods and also in many instances at the weekends.

Universities are autonomous bodies and are responsible for

their own catering services. They are, however, publicly accountable for the expenditure to the University Grants Committee (UGC) which allocates the funds on behalf of the Exchequer. The UGC's policy on catering allows for a subsidy on capital costs, *i.e.* "Buildings and equipment, Landlord expenses and rent and rates where applicable". Apart from a few special exemptions to certain universities, they are expected to break even. University catering units have traditionally been of two basic kinds :

(a) Residential facilities attached to halls which serve breakfast and evening meals.

(b) The central facilities which are open to all students and staff and usually serve lunches and snacks throughout the day with beverage. These catering facilities have to openly compete with the students's union services and independently-staffed senior common rooms.

The residential students pay in advance for part or in total for their board and lodgings. This method has been abandoned by many universities in recent years who have provided limited kitchen facilities in the residences to enable students to prepare and cook their own meals if they wished to and also introduced a pay-as you-eat system for residential students. Unfortunately, this introduction has reduced the catering revenue from students who prepare and cook their own meals.

To offset the losses incurred and to achieve a position of breakeven in catering, universities often utilize their residential and catering facilities by making them available at commercial rates to outside bodies for meetings, conferences and for holidays during the vacation periods.

Polytechnics, colleges of education and colleges of further education are financed by the local education authorities. There is no overall objective catering policy and the practices vary from one institution to another depending very much on the local authority and the local political party in power. In general most

polytechnics and colleges catering is subsidized with policies usually requiring that food and labour costs be covered for the year from the catering revenue, by accepting losses in the summer term because of circumstances requiring lower student attendance and by making a gross profit during the rest of the year.

Hospitals : Hospital catering facilities have improved considerably over the past twenty years with the result that new hospitals in particular are benefiting from the well-planned and managed catering services. Hospitals require a specialized form of catering as the customer is normally unable to move elsewhere and choose alternative facilities and therefore special attention must be given to the food and beverage. As with the school meals service, the hospital catering service is structured on a per capital allowance for patients but with staff paying for all of their meals.

Traditionally, a decentralized approach was used in the hospital in which the patient's food and beverage were portioned away from the main production area, at the hospital's kitchens and wards. This, of course resulted however, in the patients receiving cold, unappetizing meals because of the length of time between the food being prepared and the patients actually receiving it.

Today this method of food service is being replaced by the centralized approach which involves the preparation of the patients' trays in or close to the main production area. From here they are transported by trucks or mechanical conveyors to various floors, and from there directly to the patients so that there is very little delay between the food being plated and served to the patient.

A recent trend, though, has been for hospital catering to be open for tender by contract caterers where in many instances a general production system for several nearby hospitals would have to be operated to be viable.

The Services : The Services include the Armed Forces—the Navy, Army and Air Force; the Police and Fire service; and some government departments. In the Armed Forces they often have their own specialist catering brand for example the Army has the Army Catering Corps, and civil organisation such as the Metropolitan Police force and the Post Office service also their own catering departments. The levels of food and beverage facilities for the Services vary from the large self-service cafeterias for the majority of personnel, to the high-class traditional restaurants for the more senior members of staff. A considerable number of functions are also held by the Services giving rise to both small and large scale banquet arrangements.

Prisons : The diet for the inmates is based upon fixed weekly quantities of specific named food commodities with a small weekly cash allowance per head for fresh meat and a further separate weekly cash allowance per head for the local purchase of dietary extras of which a proportion is spent on fresh fruit.

The catering within the prisons is the responsibility of the prisons governor with delegated responsibility being given to a catering officer.

Employee Catering : This is the provision of catering services to employees. The activity may be performed either directly by the employer or subcontracted out to contract caterers. A direct catering service which is running smoothly and being well-managed is unlikely to change to using a contractor. Employing the services of a catering contractor involves defining exactly what is required of the contractor in terms of level of service, costs per employee head, revenue, etc. At present contract caterers operate between 25 and 30 per cent of employee catering units and this figure has changed little since contract caterers first began to appear.

In providing a catering service for the employees, the parent company may decide at one extreme to subsidize the facility

or at the other to pass all the costs on to the customer. There are various formulas for subsidizing prices, but a general one is for the revenue from the catering facility to cover food and labour costs with the remaining costs, such as premises and equipment, fuel costs and management fees to be met by the employer.

In some sectors of the industry the catering service may be provided virtually free, such as in oil companies, insurance and banking, with the employees making a small token payment per meal.

A variety of catering styles and level of services are found in industrial catering situations. The majority of the market is catered for by popular and fast-food facilities incorporating different methods of service, such as self-service cafeterias, buffet restaurants and vending operations. Management in large companies may also have the additional choice of waiter service facilities. At the top end of the industrial catering market, that is, those facilities catering for directors and executives, the standard of food and service can equal those found in commercial high class restaurants, with silver service being the norm.

The number of food and beverage outlets reviewed here illustrate the diversity of the hotel and catering industry. It is diverse because it caters for a diverse and growing eating-out market. As with all marketing situations, it is prone to change, but although there may be shifts from one sector to another in terms of volume, within the general structure of the industry the future points the way towards growth and expansion.

The Meal/Drink Experience : The 'meal/drink experience' may be defined as a series of events, both tangible and intangible that a customer experiences when eating out. It is difficult to define exactly where a meal/drink experience actually starts, and indeed ends, although it is usually assumed that the main part of the experience begins when a customer enters a restaurant and ends when he leaves the restaurant.

The series of events and experiences the customer undergoes when eating out may be divided into those tangible aspects of the product, that is the food and drink, and those intangible aspects such as service, atmosphere, mood, etc. In order for the product offered by the restaurant to be acceptable to the customer, it is necessary for the tangible and intangible components of the restaurant to combine together and to be seen by the customer as one total product, and not a number of disjoined parts. It is therefore the duty of the restaurant owners or managers to construct this complete product and to present it to the customer.

The different components of the meal/drink experience that may be identified and which are considered by a catering facility include the following :

Food and Drink : The kind of food and drink that people choose to consume away from home depends mainly on the amount of money that they are prepared to pay for within a given set of circumstances at a specific point in time. Apart from the cost aspect, the factors which are of particular concern to the customer include :

(a) The type of choice of food and drink available.

(b) The quality of the product offered *(e.g.* fresh or convenience food; Chateau bottled or a blended non-Chateau bottled wine)

(c) The quantity of product offered *i.e.* the portion sizes.

(d) The consistent standard of the product. A customer returning to the restaurant and repeating his order of an item would expect the product to be very similar to what he had experienced before.

(e) The range of textures, flavours, aromas and colours offered by a food dish or the taste, aroma and colour offered by a drink.

(f) The appropriate temperature at which the food and drink is served.

(g) The presentation of the food and drink and how it enhances the product offered.

(h) The perceived value for money.

Variety in Menu Choice

The type of menu offered by an establishment and the variety of menu choice should also conform to the requirements of the total meal experience. At the lower level of the market the choice of many items in a restaurant is usually fairly limited for a number of reasons. Firstly, price. If a customer is paying for a three-course meal the range of menu items that can be made available within the cost limits of such an operation is obviously more limited than in operations where the customer's average spending power is higher. Secondly, the amount of time taken to consume meals at this level of the market varies between less than half an hour and one hour, but rarely exceeds this.

Of this amount of time the customer in these establishments takes proportionately little. In studying the menu choice. Thirdly, it may be suggested that customers frequenting this lower level of the market may feel uncomfortable if presented with a very large menu selection and prefer a more limited, but still varied menu choice.

In high-class restaurants where the average spending power is higher, the menu selection is normally much greater. In these establishments which encourage a luxury meal experience, the minimum amount of time customers usually spend on a meal is one and a half hours, and may often be three to four hours depending on the size of the group and the occasion. The proportion of the time that may be devoted to reading the menu and selecting from the menu items is correspondingly greater. The customers frequenting these types of establishments would also expect to be offered a large menu selection, including a number of chef's specialities and other dishes.

The menu choice offered by a restaurant is therefore dependent on a number of interrelated factors—the price the customer is willing to pay, the amount of time available for the meal experience; the level of the market to which the restaurant is catering and consequently the types of customers likely to frequent restaurant. Further considerations affecting the choice of menu from the caterer's point of view are the production and service facilities available, the skills of the staff, the availability of commodities and the potential profitability of the menu.

Level of Service : Broadly speaking, the higher the cost of the meal the more service the customer expects to receive. In a self-service cafeteria the degree of service he receives is comparatively little. Customer collects his own food from the service counters, carries it to a table, and generally clears his dishes from the table at the end of his meal. As the cost of the meal to the customer increases so will the amount of service he receives. At the top end of the catering market, where the customer pays over Rs. 300 per head for a meal, full waiter silver service is provided.

The actual service of the food and beverage to the customer is described as the 'direct' service; part of restaurant's total service, however, is also comprised of 'indirect' services. These include the provision of cloakroom facilities—somewhere for the customer to leave coats and bags safely; and the availability of a telephone for customer use and this is particularly important in restaurants with a large business lunch trade. It is necessary for a restaurant to identify the level of service it is going to offer in its catering establishment and to extend this standard of service throughout all aspects of the operation.

Thus if a restaurant has a very formal type of food and beverage service, usually associated with high class operations, the other aspects of the restaurant service are equally formal-the speed, efficiency and dress of staff, the degree of personalization and courtesy the customer receives, and so on.

It is important therefore for a restaurant operation to consider not only the service of the food and beverages for which the staff are usually adequately trained, but also to take into account the indirect service aspects of the operation, which the customer particularly notices.

Value for Money : The concept of value for money varies from one sector of the market to another, and indeed from one customer to another. In majority of cases however, a customer will frequent a restaurant not only because of its food and service, but also because he feels it gives him value for money. At the lower end of the market inclusive price meals are often offered for *e.g.* by many of the fast food operations, so that a prospective client is aware in advance what the total cost of the meal will be, and this will help alleviate any concern the customer may have about being able to pay.

At the other end of the market, menu items are often charged for separately, because at this level of the market the total cost of the meal is not such an important factor to the customer as perhaps are the other aspects of the operation, such as the standard of food or the level of service offered. However, there has been more emphasis over recent years on the set price menu in quality and luxury restaurants, particularly for lunch to attract business account meals where an idea of the cost can be ascertained beforehand.

Today, some establishments include a service charge in the price of their meals, others show it separately, while some operations do not include it in the individual price of the dishes, but add it to the end of the bill. Some schools of thought are of the opinion that by not showing these added extras in the price of the individual menu items, the customer may be encouraged to spend more because the prices will appear very reasonable; while others are of the opinion that the customer prefers to know exactly what he is paying and does not like to see these 'extras' added at the end of the bill. At present no

one level of the market adopts one particular approach, although broadly speaking it is more usual for these additional costs to be separated out at the higher average spending level of the market, than at the lower.

Interior Design : The interior design of a restaurant is one of the first physical aspects of a catering operation that a customer comes into contact with. The first impression of the restaurant is very important. A potential customer passing by may like the look of the establishment and decide to come and eat there while the customer who has actually planned to eat in the restaurant and likes what he sees when he enters, feels pleased with his choice of restaurant.

The interior design of a restaurant is composed of many different aspects—the size and shape of the room, the furniture and fittings, the colour scheme, lighting, etc. As with the previously described aspects of a restaurant, there is a need for a sense of totality in a restaurant's interior design. The colour scheme of the restaurant should blend, balance and be enhanced by lighting arrangements; tables and chairs should be ergonomically designed and allow for manoeuverability for both customers and staff.

The interior design of a restaurant contributes greatly to the creation of its image. A self-service cafeteria in a factory for example usually consists of a very large open area, tables and chairs of a standard design and shape, the colour scheme of the restaurant has few variations and lighting arrangements are purely functional. For this type of catering operation a consistently steady seat turnover is required, and this is achieved by designing the interior of the restaurant, such as pictures or murals to hold the customer's interest.

In luxury restaurants, however, the seat turnover is not so critical and infact customers may be encouraged to stay in the restaurant to spend more. In these types of establishments the interior design of the restaurant is very comfortable—the lighting

in the restaurant is quite subdued; the colour scheme has warmth and depth, there may be several particular points of interest in the restaurant, such as pictures or murals to hold the customers interest; tables are farther apart, and may be separated from one another in booths or by partitions; and the chairs are so designed that the customer may sit in them for several hours without feeling uncomfortable.

The importance of an interior design to a catering facility and its success cannot be emphasized enough and it is essential that professional advice is obtained from experienced designers.

ATMOSPHERE AND MOOD

The atmosphere or mood of a restaurant is a difficult aspect of an operation to define, but is often described as an intangible ‘feel’ inside a restaurant. Not all restaurants have an obvious type of atmosphere, others try to deliberately create one. For example, luxury high-class restaurants often have a very formal atmosphere which is created by the dress and attitude of the staff, the decor of the restaurant, the service accompaniments, the type of clientele that frequent these restaurants, etc. Other restaurants such as the currently popular bars, try to create a relaxed informal atmosphere, and one that is very sociable and ‘trendy’ to be a part of and seen at.

The atmosphere of a restaurant is therefore affected by many different aspects of the operation—the decor and interior design of the restaurant, the table seating arrangements, the service accompaniments, the dress and attitude of the staff, the tempo of service, the age, dress and sex of the other customers, etc. All these various aspects combine together to produce the restaurant’s atmosphere and, it is important therefore that all these elements should combine and compliment one another to present a picture of totality to the customer; should one of these aspects be out of keeping with the others, disharmony may result in the customer’s image of the restaurant, and the customer will invariably leave remembering that one small aspect.

In a high-class restaurant for example it would be expected that linen napkins would be provided; should paper ones be provided the customer may feel cheated when he considers the price he is paying for the meal.

Expectation and Identification : A single customer or a group of customers arriving at a restaurant for a meal bring with them a series of expectations regarding that restaurant—the type of service they will receive, the price they will pay, the expected atmosphere and mood of the restaurant, etc. The customer's expectation may therefore be varied and numerous, ranging from the restaurant which the customer frequents because he wants to be seen there and participate in its social atmosphere to the small quiet restaurant where the customer may go because of its intimate and personal nature.

Upon arrival at the restaurant, if the product presented to the customer is in harmony with his choice he will have a relaxed and enjoyable meal. Should the customer sense disharmony, however, between his expectations of the restaurant and the actual product he finds, like for example it is too intimate for the occasion, he may not enter the restaurant but choose another. If the disharmony is not realized until the customer is eating at the table, it is unlikely that he will leave but will have a hurried and uncomfortable meal.

There is therefore a need for the customer to identify and associate himself with a particular restaurant for a particular meal occasion. He may not always identify with the same restaurant, as his needs and expectations may vary from one meal experience to the next. For example, at a business lunch a customer may require an expensive hot cuisine restaurant with an atmosphere condusive to discussing business. Such a restaurant, however, may not be suitable for the same customer to take his wife and family to for a special occasion. A customer therefore, has different needs and expectations on different meal occasions, and similarly at different times of the day, for

example lunch and dinner. These alternating needs of customers should be identified by a restaurant and catered for, so that the restaurant offering formal business lunches may offer special function catering in the evening, when the demand for business meals is minimal.

There is a danger in these situations, however that restaurants may be led into catering for mixed markets, and it is important therefore for a restaurant offering different levels of service at different times of the day, to keep them completely separate, and not attempt to be all things to all people. Those operations that have taken this approach invariably adjust downwards to a lower socio-economic market segments than the one to which they were originally catering.

Location/Accessibility : The location of the restaurant is one of the few, if not the only unchangeable aspect of the operation, and is therefore one which requires considerable thought and attention at the initial planning stage. The restaurant's location in relation to its present markets should not only be considered, but also its location to possible future markets. For example a restaurant may rely heavily on several large firms in the surrounding area for the majority of its lunch-time trade and should several of these firms leave the area this would seriously affect the restaurant trade.

Accessibility to the restaurant is another important factor, particularly if it is situated out of a town and not within easy reach by public transport. In these cases the majority of the restaurant's clientele would travel by private transport and thought must be given to car parking spaces for the customers.

Staff : Staff employed by a restaurant operation should complement the meal experience of the customers, and they are able to do this in a variety of ways their attitude to customers, their age and sex," their uniform, the tempo of their service and so on. The number of staff servicing a restaurant is closely related to the prices charged by the establishment and the level

of service that it offers. In self-service operations very few service staff are required; in some establishments the ratio may be as high as one member of staff to eight customers. These latter types of operations are, however, charging the customer for this extra attention service and must therefore be seen to have an adequate number of staff. Not only does the number of staff in a restaurant contribute to the meal experience, but also their attitude to customers and the tempo of their service.

In a large industrial cafeteria where the ratio of service staff to customers is low, and speed of staff is important, the staff are required to work at a fast and efficient speed, and where possible leave the customers to serve themselves. In a luxury restaurant the tempo of the staff is considerably lower and more relaxed because of the high ratio of service to customers. It should be noted that the attitude of the staff is almost totally influenced by the management attitude and the environment in which the staff are working.

Additionally, such things as the level of skills of the staff, their visual cleanliness, as well as their sex, age and nationality are of importance.

Finally, the uniforms of the service staff should be appropriate for the level of the catering operation, and again this physical aspect of the restaurant must be seen to be a part of the establishment's totality. In some lower market level operations the staff may only be provided with overalls; this is in complete contrast to high class restaurants, particularly in hotels, where there is a very strict demarcation of uniform styles according to the status of the service personnel.

4

ART OF COOKING

THE GLOSSARY

Bake : Baking is a method of cooking by dry heat usually in an oven.

Barbecue : A preparation of meat where meat is basted with highly seasoned sauce.

Batter : A mixture of flour and liquid which can be used for coating or for frying.

Beat : Mixing any substance by vigorous motion wherein air is incorporated.

Blanch : Dipping any food article into boiling water for a few minutes.

Blend : Combining two or more ingredients.

Broil : To cook by exposing food directly to the heat or through a grill.

Browning : A substitute added to darken certain preparations.

Brushing : Thin coating of beaten eggs or milk to pies or any dish to provide a glossy appearance to the product.

Caramel : A brown product of sugar on heating, usually used for coating or decorating or flavouring dishes.

Caramelize: Heat sugar to brown colour.

Cisel : Finely chop vegetables.

Coat : To cover with a thin layer.

Concass : Chop roughly.

Condiments : Spices and seasonings.

Consistency : Texture of the mixture.

Cream : Beat fat with a wooden spoon until it is light and fluffy.

Croutons : Small diced bread pieces fried or toasted for decorating soups.

Custard : Steamed or baked mixture of milk and egg.

Cut and fold : Mix flour very gently into a mixture.

Cutlet : Minced meat shaped into small round or oval shapes which are usually baked, grilled or fried.

Dice : To cut into small even cubes.

Dough : Mixture of flour and liquid in a stiff form.

Dredge : Cover food with a thin sprinkling.

Dust : To sprinkle lightly with powdered sugar, milk or flour.

Escalopes : Fried sliced meat dipped in egg and bread crumbs.

Farce : Stuffing of any kind.

Fillet : Fish with bone removed or slices from the breast of birds.

Flan : A thin pastry case.

Flute : A long crisp roll of bread used for decoration.

Fondant : Sugar boiled to 234°F and smoothened into a sweet.

Fritters : Foods like meat, vegetables, fish or fruits first coated with batter and then fried.

Frosting : Icing or coating sugar for decoration.

Fry : Cooking food in hot fat.

Gelatin : *A* product made from cow's hooves and generally used for jellies. Now available from vegetable sources also.

Gild : Cover an object with beaten eggs.

Glace : Giving a glossy appearance for certain dishes with icing, frozen items or with jelly.

Hors-d'oeuvre : Small savoury tit bits used as appetizers before a meal.

Junket : Milk coagulated by the addition of rennet.

Kabab : Minced or small meat pieces braised or curried.

Knead : Forcefully mixing the flour using the knuckles of the hand.

Lard : Fatty substances of meat.

Macaroni : Paste of flour forced through a tube. Thus long strands are obtained which are known as macaroni.

Macaroons : Small cakes with coconut.

Marinate : Soak meat or fish in mixture of vinegar and spices.

Mask : Coat a dish with sauce or moulded jelly.

Mayonnaise : By mixing egg yolk, oil, vinegar and mustard a thick sauce is made which is used for dressing salads.

Mince : Finely slice or shred.

Muffin : Moulded baked batter used with butter.

Noodles : Flour paste in different shapes usually used for Chinese cooking.

Parboil : Partially cooked food.

Pare : To peel.

Pluck : Remove feathers from poultry.

Poach : Cooking on low temperature in hot liquid in an open pan.

Puree : Smooth mixture obtained by sieving cooked fruits or vegetables.

Raising Agents : Substances which produce gas when acted on by heat. Examples are baking soda, baking powder and yeast.

Saffron : A yellow colouring removed from a flower used for appearance and flavour.

Sauce : A pouring mixture used for enhancing the flavour and taste of another dish.

Saute : Cook in shallow fat to brown.

Scald : Immerse food in boiling liquid.

Shortening : Fat used for baking.

Shred : Cut in fine strips.

Sift : Put dry ingredients through a sieve.

Simmer. Cook food in liquid on low temperature just below the boiling point.

Souffle : Lightly baked or steamed pudding puffed with egg whiles.

Spaghetti : An Italian paste finer than macaroni and coarser than vermicelli.

Steam : Cook in steam.

Steep : Soak in liquid.

Stew : Cook by simmering in little liquid.

Stock : Flavoured liquid from meat, vegetables, fish or poultry used for soups, stews or sauces.

THE SIMILARITIES

Weight and volume equivalents are essential to work out new recipes. To scientifically impart the knowledge of cooking weights and volume equivalents are used. Some common weights and volume are given below:

1 teaspoons	...	5 millilitres
3 tablespoons	...	3 teaspoons or 1/2 ounce liquid
1 Cup	...	16 tablespoons or 8 ounces or 235 millilitre
1/2 Pint	...	10 ounces or 295 millilitres (approximate)
1 Pint	...	590 millilitre (approximate)
2 Pint	...	1.18 litre
1 Ounce	...	30 grammes
16 Ounce	...	455 grammes
1 Pound	...	455 grammes
2.5 Pound	...	1 kilogramme
1 Ounce	...	30 millilitre
34 Ounce	...	1 litre

THE PURPOSES

1. Cooking partly sterilizes food. Above 40°C the growth of bacteria decreases rapidly and in general it ceases above 45°C. Non-sporing bacteria are killed at temperature above 60°C for varying periods of time. For instance, to make milk safe it is pasteurized at 62.8°C for 30 minutes. Boiling kills living cells, with the exception of spores, in a few seconds. Spore-bearing bacteria take about 4 to 5 hours boiling to be destroyed. To destroy them in a shorter time higher temperature must be used.
2. Cooking helps to make food more digestible. Complex foods are many a time split into simpler substances

during cooking. This helps the body to absorb and utilise the food more readily than the raw food.

3. Cooking increases palatability.
4. Cooking makes food more attractive in appearance and therefore more appetising.
5. Cooking introduces variety. Many different types of dishes can be prepared with the same ingredients.
6. Cooking helps to provide a balanced meal. The different ingredients combined together in one dish make it easier to provide a balanced meal.

While the correct preparation of ingredients and correct mixing are necessary, greater skill is needed in the actual cooking of the food. The different methods of cooking are, roasting, baking, frying, boiling, poaching, steaming, stewing, braising, broiling, grilling.

Roasting

Spit Roasting : The food to be cooked is brought in contact with direct flame in front of a clear bright fire. The food is basted over with fat and is also turned regularly to ensure even cooking and browning. This method, known now as spit roasting, is little used as only good quality meats are suitable for this method. Roast meats, however, have excellent flavour and are still served in large hotels and in special restaurants and hotels, *e.g.*, barbecued meat.

Oven Roasting : This has now taken the place of spit roasting because of its convenience, although only first class meat, poultry and vegetables are thus cooked. This is cooked in a closed oven with the aid of fat. The food is put into a fairly hot oven for 5 to 10 minutes and the temperature is lowered to allow the joint to be cooked. Cooking in a moderate oven for a longer time produces a better cooked joint than cooking at high temperature for a shorter period. Aluminium foil is now used in oven roasting. The joint is larded or raised with fat and

cooked in the oven till done. The method is an improvement on oven roasting as the meat retains its moisture and flavour.

Pot Roasting : This method is used to cook small joints and birds if no oven is available, but a thick heavy pan is essential. Enough fat is melted to cover the bottom of the pan. When the fat is hot the joint is browned. It is then lifted out and 2 or 3 skewers are kept at the bottom on which the joint is placed. This is to prevent the joint from sticking to the pan. The joint should just touch the fat. The pan is then covered tightly with a well fitting lid and cooked over a very low fire. The joint could be basted and turned occasionally to ensure even cooking. Prepared root vegetables and potatoes can also be cooked round the meat.

Baking : The food to be cooked is surrounded by hot air in a closed oven. The action of dry heat is modified by the steam which arises from the food whilst cooking. Bread, cakes, pastries, puddings, vegetables and potatoes may be cooked by this method.

Frying : This is a method of cooking whereby the food to be cooked is brought in contact with hot fat. Food cooked in this way is said to be indigestible but if the method be correctly and carefully carried out the food is quite suitable for normal people. The advantages of frying are (1) the food is very appetising, (2) it is a quick method of cooking, and (3) the keeping quality of food improves. For other foods and for reheating of food frying is a good means of providing variety.

There are two types of frying: (1) shallow fat frying, (2) deep fat frying.

Shallow Fat Frying : Only a little fat is used and the food is turned over in order that both sides may be browned. Generally this method is applied to precooked food unless the food takes very little time to cook (omelette, liver, etc.). Fat absorption is greater when food is shallow fried rather than deep fried.

Deep Fat Frying : The food is completely immersed in hot fat and therefore a large quantity of fat is required. The quantity of fat requires some time to heat. Special care must be taken to prevent overheating of fat as this spoils both the food as well as the fat. The fat decomposes at high temperature. If the fat is not hot enough the food breaks up and it absorbs extra fat thus making the product unfit for consumption.

Both sweets and savouries may be cooked by this method without the flavour affecting the fat or the foods, provided correct principles are applied. Food cooked by deep fat frying has a much better appearance “”an that cooked by shallow fat frying, as food is evenly browned.

General Rules for Frying

1. Have the fire clear and hot
2. Make the food into suitable sizes and shapes and see that it is free from cracks as far as possible.
3. Apply the coating evenly. The breadcrumbs used should not be coarse. Remove any excess and press loose crumbs firmly on.
4. When frying chicken, dry off all moisture before dipping in flour.
5. Use fat with a high smoking point The fat must be quite still and at the right temperature required, before the food is put in.
6. Do not put in too many articles at the same time as this will lower the temperature.
7. See that the temperature is not increased for increased output.
8. Follow a time and temperature chart
9. Fry to a golden brown on both sides, turning over the food if necessary.
10. Drain well on paper and serve attractively.

11. Cover fats between frying periods when left in the fryer and maintain temperature not higher than 200°F.
12. Once fat has been used for frying, strain and store in cans in a refrigerator.
13. Replenish with fresh fat to original volume after each frying period.
14. Fat begins to thicken, getting to be what is known as gummy or syrupy, with container use. This condition is known as polymerisation.
15. Fats that are used for frying should have a high stability.
16. Darkening of the fat is caused by cooking at too high a temperature which carbonises loose breadcrumbs and small particles of fried food. Such fat should be strained and replenished with fresh fat before being used again.

Boiling : Food is cooked by surrounding it with boiling or simmering liquid (stock or water). Only sufficient liquid should be used to cover the article to be cooked.

Vegetables grown above the ground are cooked in boiling salted water and vegetables grown below the ground are started in cold, salted water with the exception of new potatoes and new carrots. Dry vegetables are started in cold water. Salt is added only after the vegetables are tender. Fish should be put into hot liquid and allowed to simmer.

Poaching : Poaching is cooking slowly in a minimum amount of liquid which should never be allowed to boil but should be just off boil. Fish, fruits and eggs are poached. When poaching eggs, a little vinegar and salt are added to the liquid to help in quicker coagulation and thus prevent disintegration.

Steaming : The food to be cooked is surrounded by plenty of steam from fast boiling water directly or by having the food in a basin or some other dish placed in steaming or boiling

water. This is a slow process of cooking and only easily cooked food can be prepared by this method.

Advantages of Steaming

(1) Food cooked by this method is easily digested.

(2) All nourishment and flavours remain in the food.

(3) Food cannot be easily overcooked.

(4) Pudding basins and other containers need not be filled to the top, thus allowing room for food to rise, making food light.

General Rules of Steaming

(1) Prepare the vessel and have the water fast boiling.

(2) If a basin is to be used as a container inside the steamer, see that it is greased and that it is covered with a well fitted lid or with grease-proof paper. This is to prevent condensed moisture from falling on the food.

(3) Keep a kettle of boiling water handy so that the water in the steamer can be replaced as it evaporates away.

(4) Never allow the water in the steamer to go off boil, except when preparing dishes with eggs as the main ingredient as in custard.

(5) Dish out food quickly and serve hot. An appropriate sauce must accompany steamed food to make it appetising as steamed food is generally bland.

Stewing : This is a very gentle method of cooking in a closed pan using only a small quantity of liquid. The food should never be more than half covered with the liquid and the food above this level is thus really cooked by steam.

Advantages

1. Cheap cuts of meat, old fowls and tough or underripe fruits may be prepared by this method as the slow moist method of cooking softens fibres rendering them tender.

2. Meat and vegetables may be cooked and served together and so make an appetising dish while saving fuel and labour.
3. Food may be cooked in the oven after other food is cooked or it may be cooked on the side of the fire or on a very small gas or oil flame, thus again saving fuel.
4. All nourishment and flavour are retained and hence food is very appetising and healthy.

General Rules

(1) Have ready a pan with a well fitted lid.

(2) Prepare the food and cut into pieces conveniently for serving.

(3) Use tepid liquid and only sufficient to half cover the food.

Braising : This is a combined method of roasting and stewing in a pan with a tight fitting lid. The meat should be sealed by browning on all sides and then placed on a lightly fried bed of vegetables (generally root). Stock or gravy is added which should come up to two-thirds of the meat. The flavourings and seasonings are then added. The lid is put on and it is allowed to cook gently on the stove or in the oven. When nearly done the lid is removed and the joint is frequently basted to glaze it.

Broiling : Broiling is cooking by direct heat and is used synonymously with grilling. In pan broiling the food is cooked uncovered on hot metal grill or a trying pan. The pan or grill is oiled slightly to prevent sticking.

Grilling : Used synonymously with broiling. This is cooking by dry heat and is carried on an iron grill over the fire or on a grill placed in a tin under a gas or electric grill.

Over-heat : This is cooking on greased grill bars with the help of fat over direct heat.

Only first class cuts of meat, poultry and certain fish can be prepared this way. The grill bars are brushed with oil to prevent food sticking and can be heated by charcoal, coke, gas or electricity. The thickness of the food and the heat of the grill determine the cooking time.

Under-heat : Cooking is done on grill bars or on trays under direct heat. Steaks, chops and similar foods are cooked on the bars but fish, tomato and mushroom are usually cooked on trays.

Between Heat : Food is cooked between electrically heated grill bars.

Infrared : This is cooking by infrared radiation. This method reduces cooking time considerably, for instance, a steak can be grilled in one minute.

Microwave Cooking : Microwave heating is used in cooking in all advanced countries. Since the heating is very quick it has its own advantages. A simple microwave oven consists of a metal cabinet into which a quick magnetron is inserted. A magnetron is a kind of electron tube within a magnetic field which generates high frequency radiant energy. Alongwith a magnetron a metal fan is also installed and the fan distributes the microwave throughout. Foods placed in the oven is heated by microwaves from all directions and it helps in easy cooking.

ROLE OF HERBS

Tarragon : It is a native of Southern Europe. It is particularly common in France. The leaves of the plant are used.

Hop : Found in the Northern Temperate Region and Southern Europe. The flowers and shoots of the plant are used either fresh or dry.

Basil: It is an annual plant native to India. Its use in the West is relatively recent. Leaves are used fresh or dried. Fresh leaves have a taste similar to that clove. When dried, they taste more

like curry leaves. It has mainly used in Italian dishes like Italian Pasta Sauce.

Sage : There are many varieties of this herb which are native to the Northern Mediterranean Coast. Leaves are used fresh or dried, mainly in stuffings.

Bay Leaf: The tree was originally found in Asia and is now grown in major parts of Europe. Leaves are used fresh or dried in stocks as bouquet garni, and as flavouring in many Indian dishes.

Thyme: There are many varieties of this perenninal herb which belong to Southern Europe and the Mediterranean. The leaves have many uses and forms the basic part of bouquet garni. It has a strong, sharp taste, hence, lemon thyme which is less strong with a lemon tange is often used instead.

Chive : Is a native of the coolest parts of Europe. It is now available in many parts of the world including America and Canada. Its stems are generally used. Their bright green colour and onion-like taste makes them an ideal garnish for salads and soups.

Oregano : Refers to wild Majoram. It is native of Asia, Europe and North Africa. It is now available worldwide. The leaves are usually used dried and are the best known for their use in Italian dishes, specially pizzas.

Rosemary : It is an aromatic herb native to the Mediterranean and is unavailable in most parts of the world. The leaves are used fresh or dried, most notably with lamb.

Dill: This plant belongs to the parsley family and is a native of Southern Europe and Western Asia and is now also grown in Northern Europe. The leaves and seeds are used fresh or dried. The most important use of the leaves is probably in dill pickles, though they can also be used in salads or in cooked vegetables, and are essential to dill vinegar.

Chervil: It is an annual plant from Southern Russia, and

the Middle East. It is now grown mainly in France. Fresh or dried leaves are used.

Fennel: A plant native to Southern England, and is now grown in many countries including America. The fresh or dried seeds or the dried roots are traditionally used with fish.

Grated Horse Radish : The grated outer part of the pungent root of the horse radish plant, a native of Eastern Europe, is usually added to cream, vinegar or mayonnaise to make a relish.

Cayenne Pepper : Refers to the dried pods of red chilli pepper. It is a native of Central America. It is ground to produce this hot pungent spice.

Paprika: It is made from a type of pepper native to South America. Paprika varies in taste from very hot to mild and sweet, and in appearance from rosy brown to scarlet.

Caper: Capers are unopened buds of a shrub native of the Mediterranean region. They are used only in their pickled form.

Olive : The fruit of a tree native of the Mediterranean Coast. They are used only in the pickled form. There are a variety of olives like pickled olive, black olive, dried olive, Spanish olive, olives with almonds, olives stuffed with dried pepper.

Gherkin : These are small pickled cucumber-like vegetables and can be eaten with cold meat, sausage and salad.

5

STANDARD OF FOOD

A large majority of our people are satisfied by filling their bellies with some foodstuffs. Most of the people ignore the nutritious aspect of the food they eat. Prevalence of malnutrition is due to insufficient intake of foodstuffs. In order to assess the nutritional status dietary intake must be calculated. Diet surveys are used to collect information about the dietary intake, dietary habits, preservation methods, cooking methods and special diets for special conditions and in diseases. Diet surveys also provide information regarding the economic and social factors influencing food production and consumption patterns of families and communities. To conduct diet surveys certain factors are to be taken into account. They are trained personnel, population sampling, various methods available for conducing diet surveys and analysis of the data and calculations of nutritive values.

The persons to be engaged in conducting diet survey must be trained in conducting such surveys. They must be trained to create rapport with the housewives and in adopting tactful methods to collect information from them. They must be aware of other principles of nutrition and dietary habits of the local community.

Population sampling must be carried out with the help of a statistician. The choice of diet survey methods depends on the purpose of the survey.

The sample size also depends on the purpose of the survey, availability of trained personnel, time and resources like money. The duration of the survey depends on the purpose and methods adopted. Normally 7 to 10 days are preferred for diet surveys.

DIFFERENT WAYS

Commonly used methods in our country are: (1) oral questionnaire method, (2) food inventory or log book method, and (3) weighing of raw and cooked foods.

Oral Questionnaire Method : Oral questionnaire or interview is the most commonly used method of diet survey. The investigator has to formulate a diet survey questionnaire depending upon the purpose. After conducting a pilot study with the questionnaire changes can be made on the pattern of the questions. Then the investigator goes from door to door and collects information regarding the types and qualities of foods consumed.

The data is not very perfect, only approximate amounts can be collected through this method. Therefore, this method is suitable only to collect information on the general dietary patterns or an approximate picture of dietary habits of a large section of population.

General ideas like choice of foods, foods avoided in certain conditions, foods included in special conditions or in festivals, food fads and fallacies, are to be collected. The advantages of the questionnaire method are that it is not a time-consuming method, therefore a large number of families can be covered within a specific time.

Food Inventory or Log Book Method : This method can be used only with a literate group because a book with question is entrusted to the head of the family or to the housewife. The

person entrusted must enter all purchases in the book. Full cooperation from the householder is essential because reliability of the data depends upon the entry. Therefore at times the data may not be authentic.

Weighing of Raw and Cooked Foods : This method is the most reliable one. But it is time-consuming and therefore it is not used for a large sample. As the investigator cannot leave the questionnaire with the householder she has to stay near and record the amount of various foods before and after cooking.

The amount of food used can be recorded by weighing the leftovers after consumption. Often the housewife shows more raw foods to give a wrong impression about their food intake. Therefore the investigator must have some practical knowledge about the quantities of cooked foods of various sources.

CONSUMPTION AREA

In order to find out the nutritional adequacy of a family, a group adult consumption unit is calculated. In this method, the heterogenic groups of people *i.e.*, school going, adult, geriatric, pregnant, a uniform calculation can be applied. This makes the total requirement calculation simple.

For adult consumption unit a sedentary man is taken as one adult consumption unit (ACU) and the calorie requirements of other age groups and special groups are expressed in terms of proportionate adult consumption units.

The adult consumption unit coefficient laid down by the Indian Council of Medical Research for the various groups and the type of physical activity is given below:

Adult male (Sedentary worker)	1.0
Adult male (Moderate worker)	1.2
Adult male (Heavy worker)	1.6
Adult female (Sedentary worker)	0.8

Adult female (Moderate worker)					0.9
Adult female (Heavy worker)					1.2
Adolescents	12	-	21	yrs	1.0
Children	9	-	12	yrs	0.8
Children	7	-	9	yrs	0.7
Children	5	-	7	yrs	0.6
Children	3	-	5	yrs	0.5
Children	1	-	3	yrs	0.4

Calculation of Nutritive Value of the Family Diet in terms of Adult Consumption Unit : To find out the adult consumption unit of the family, the number of persons, their physical activities and their ages have to be recorded. Total consumption unit has to be calculated using the above table. For example, for a family of 4, the adult consumption unit is given below:

Member	***Age***	***Occupation***	***A.C.U.***
Father	57 yrs	Retired Teacher	1.2
Mother	55 yrs	Housewife	0.9
Daughter	23 yrs	Student	0.9
Son	17 yrs	Student	1.0
		Total	4.0

The adult consumption unit of the family is 4. The total calorie requirement of the family is calculated below.

The energy requirement for a sedentary	=	2,800 kcals
man for 4 A.C.U.	=	2,800 x 4
	=	11, 200 kcals
Total cereals for the family per day	=	460 gms x 4
	=	1,040 gms

Preservation of Food

Food spoilage is brought about by the action of enzymes present in foods or due to the action of micro-organisms such as mould, yeast and bacteria or due to infestation with insects and worms. The environment unfavourable to the action of enzymes or to the growth of micro-organism is the main objective of food preservation.

Natural and artificial methods are adopted for this purpose. Preservatives are also added to foods to preserve them. Various agents are used to bring either physical or chemical changes in food materials which are to be preserved.

As the principal spoilage agents are normally present in foods, destroying them or preventing their development becomes the chief problem of food preservation. Any condition opposed to the development of these organisms, whether by retarding their growth or by entirely destroying them, aids in the preservation of food.

Methods commonly used to this end include common or cellar storage, refrigeration, canning, freezing, use of preservatives, drying and the exclusion of air. Although not a commonly used method at present, “cold sterilisation” or irradiation by beta and gamma rays to prolong the keeping quality of foods is being widely studied experimentally. The possibilities of this method of food preservation are great. When some of the major problems now limiting its use are solved, it is probable there will be radical changes in the present accepted methods of handling foods.

Refrigeration : Micro-organisms, although not readily destroyed by severe cold, are much less active at low temperature. Refrigeration is widely used both in homes and in commercial plants, as a means of maintaining the low temperature found satisfactory in the storage of perishable foods. Fresh milk, meat and similar foods are kept just above the freezing point.

Certain fruits and vegetables also keep better when cold, although as a rule they do not require low temperature for the limited time they are stored in the home as do the protein foods cited. Under-ripe fruits usually ripen rapidly at room temperatures. The keeping of cooked foods and leftovers is greatly facilitated by refrigeration, which is a more expensive but also a more efficient method of preservation than common storage.

Wrapping certain fruits and vegetables in paper or cellophane, or coating them with wax, improves the keeping quality. Pears and apples of high quality to be kept for winter use and oranges, lemons and grapefruit are often wrapped. The fruit or the paper in which it is wrapped may be treated to retard mould formation. Green peppers, tomatoes, oranges and other citrus fruits, cucumbers and cantaloupes are among the foods whose keeping quality is improved when they are coated with wax.

Heating : Food is commonly preserved through the application of high temperatures. A temperature considerably above that of the body may result in either a pasteurised or a sterilised product. Foods are commonly pasteurised by being held at a temperature of from 60° to 66° C, for thirty to forty minutes, during which time most of the organisms, although not all, are killed. Spores and some vegetative forms of bacteria remain, but as a rule those causing diseases are destroyed. This method is used for temporary preservation of milk, and for preservation of fruit juices and other fruit products of delicate flavour. Acid foods are rendered sterile by boiling for a comparatively short time.

Canning : If the effectiveness of pasteurisation and sterilisation is to extend over a period of time of practical significance, the material thus treated must be protected from fresh contamination by micro-organisms. The fact that in canning the sterilised or pasteurised food is afforded such. Protection accounts, at least in part, for the rapid growth in popularity of

the process as a means of food preservation. The first foods preserved %9 canning were sealed in glass.

All prejudice which once existed against canned foods has been removed. Experiments have shown canned foods to be as wholesome as any form of preserved food. Often the canned food is found to superior in food value to the freshly cooked. Canned foods are ready to use at a moment's notice. When food is to be kept over a long period of time, canned products are also most satisfactory and they do not require special temperatures or equipment for storage.

Freezing : Freezing, like cold storage, does not destroy the micro-organisms enzymes present in the foods. It does render them more or less inactive however, so that frozen foods, when held at the proper temperature undergo change slowly. This applies to the nutritive value as well as to other chemical and physical characteristics.

Practically all common fruits are now preserved by freezing. However, the success with which the different fruits can be freezing varies. Most of the vegetables that are served cooked may be preserved by freezing. Scalding to destroy the enzymes is essential for successful preservation of almost all vegetables by this method.

Hence vegetable to be used fresh and crisp in salads cannot be preserved by freezing. Fish, poultry and game, as well as beef, veal, pork and lamb to preserved by freezing. Frozen foods have little or no waste at the time using and little time is required for preparation. However, time must allowed for the thawing of fruits to be served raw, and the cooking period of frozen meats and vegetables not already defrosted must be sufficient to allow for both thawing and cooking.

Using Chemical Preservatives : Certain chemicals are helpful in preserving foods either by retarding preventing the growth of micro-organisms. These may be either added to the

product or produced in it by fermentation. Sugar, a common he preservative, is often used in such quantities as to increase concentration of the food and make it an unfavourable medium for organisms. Salt and acid, in the form of vinegar or lemon juice, are substances added for their preservative action. Frequently, fermentation process is used to produce, within the food itself, acetic lactic that exerts the same preservative action as is obtained by addition of vinegar.

Salt is used as an aid in the preservation of vegetables by fermentation. It aids both in drawing out the juices are delaying the action of certain spoilage agents. Formerly, spices often used in such quantities as to have a definite preservative effect. Today the concentration in which they are used is usually less than employed earlier and it is believed that only a few of them are of value as preservatives.

Certain preservatives such as borax, boric acid, sulfites, and formaldehyde, once sold as canning powders, are now considered injurious to human beings, and their use is usually prohibited.

Preserving and Pickling : Preserving and pickling are methods of preservation frequently employed. Long before canning was known as a means of preserving foods, the use of preservatives was practised. Salting of foods was an early method of preservation. Salt is a valuable preservative, both as an antiseptic and as an agent for removing water.

Placing foods in brine of certain concentration promotes fermentation and the foods develop an agreeable flavour. Sugar in large amount is likewise a favourite preservative. Today, although practically every known variety of preserve and pickle is found in the market, the distinctive flavour of the homemade product is often preserved.

Drying : Removal of moisture is of benefit in preserving food. Although it is difficult to dry foods to the point of destroying

micro-organisms, it is comparatively easy to dry foods so that no spoilage takes place. All organisms must have food on which to develop and grow and before the food is available to them it must be in a solution which is rather dilute.

These micro-organisms obtain food by osmotic action. Drying of foods to prevent spoilage does not necessarily mean complete removal of the water, but it does mean concentration to such a point that the liquid is denser than the body fluid of the organisms. When the liquid outside the cell wall is more dense than that inside, the liquid within tends to be removed from the cell and the body processes are delayed or prevented.

Hence, although the food is present it may not be available to the organism which might cause spoilage. Drying may retard enzyme action also, but in vegetables especially, the effect of enzymes is sufficient to cause comparatively rapid deterioration. Scalding to destroy the enzymes is highly beneficial in prolonging the storage life of dehydrated vegetables. Drying alters greatly the character of the food and requires some time for preparation both before and after the process.

6

Various Cuisines

Dishes from Italy

Italian cuisine is a collection of regional cuisines. The culinary tradition dates back to 2000 years. When people in other parts of Europe were still living on a staple diet of millet and oatmeal porridge, in Sicily the Greek conquerors were feasting lavishly. A few centuries later derived a typical Roman feast which began with peachen's eggs, truffles, oysters, asparagus, lobsters, fried sausages, olives and plums, followed by the main course—stuffed geese, chicken, pigs, stewed flamingoes, tongue and peacock's brain, goose liver pates game.

The art of cooking declined with the fall of Roman Empire and it was not until 15th century that it revived in the merchant cities of Genoa, Venice, Pisa and Florence. Catherine De' Medici, on her marriage in 1338 to the future Henri II of France, took Florentine cooks with her and introduced the French to the skills of cooking. Italians introduced artichokes, haricot beans, peas and other vegetables outside Italy. Best Italian food is, as a rule, still eaten in its own region—beef in Tuscany, artichokes in Rome, peas in the Lazio and Marches. Pasta is consumed all over Italy. The risotto in Venice must always be served all'onda,

rippling, a reference to its liquid consistency and appropriate to this city of the sea. North East Italy is famous for ham—prosciutto de pum. Parmesan cheese its full name is Grana Parmigiano Reggieno from Parma. Herbs are much used in Tusan cooking—they are thyme, oregano, mint, basil, parsley, tarragon. Some of the famous Italian dishes are as follows:

Zuppa di fagioli (bean soup), Minestrone, Spaghetti Bolognese, Zuppa alla pavese (consomme with egg and cheese), Obsobuco alla milanaise, Scallopine de vitello alla bolognese (Veal escalope Bologna style), Risotto alla milanese, Cassata alla siciliana, Pizza alla Andrea (Black-olives, tomato, anchovies), Pizza Margherita (tomato sauce, garlic, oregano).

With meal starters serve a dry white or light rose wine.

Rice and pasta light red or robust rose wine.

Pizza a rough red wine

Fish rose or medium dry wine

Meat full bodied red wine with Game, Roast, Chicken, Turkey light red wine.

Cheese—serve dry or medium white or light rose, with Gorgonzola full bodied red wine.

Desert wines—Aleatico de Paglia, Marsah, Mocoato, Vino Santo.

Dry white wines—Copri bianco, Fruscati (secco), Orvieto (secco), Soava, Valtellina.

Medium dry white—Lacrima Christi del vesuvio, verdicchio di Jesi

Semi Sweet—Albana di Romagna, Frascati, Orviato

Sparkling—Asti spumante, Lacrima Christi

Light Red—Bardolino, Chianti, Grignolino, Grumello, Nebiolo, Sassela

Generous red—Bar bareseo, Bar bera, Barola, Inferno, Santa Modena

Pasta-aselutta—Dry pasta with sauce, Pasta secca-eggless pesta

Pasta all' uenva—egg pasta, Maccheroni—Generic term for Pasta.

Dishes from Rome/Greece

Greek and Roman customs had an influence of their cuisine on the cuisine of Syrians, Lydians, Armenians, Babylonians, Cilicians and Mesopotamians. King Khusroo I and II had spent enormous sum on fantastic banquets lavishly laid, dazzling with luxury on promotion of food.

Islamic Empire stretched across North Africa, Spain and Cicily. Nowadays many Middle East countries such as Syria, Lebanon, Egypt, Iran, Turkey, Iraq, Saudi Arabia, Yemen, Sudan, Algeria, Tunisia, Morocco all have Islamic culinary linkage.

The religion of Islam is the most important part of Middle East culture. The code of religion is derived mainly from Quran. Prophet Muhammad repeated injunctions about kind of food permitted and not permitted. The following are forbidden: (1) Animals dead before they are slaughtered and those killed for other reasons than that of food. The animal should only be slaughtered as per the Halal technique which consists of severing the neck, the wind pipe, two jugular veins without lifting the knife off until the severence is complete. (2) Animal slaughtered as an offering to pagan deity or in the name of deity. (3) Alcoholic or fermented liquids and all inebriated liquors. (4) Pig's flesh. (5) Blood.

A large variety of spices and dry nuts were extensively used in the culinary preparation as these were brought from China and India by Arabians. In the medieval recipes some spices like cumin, coriander, cinnamon, ginger and masticwere used. A Lebanese spice mixture is made up of one part of hot pepper (Cayenne), two parts of sweet pepper (paprika) and two parts of cinnamon. Arab favourite, called taklia is ground coriander fried with crushed garlic. All spice or Jamican pepper was also used as it has the flavour of 4 spices—cinnamon, nutmeg, clove and ginger.

Fresh herbs like coriander, dill, mint, chervil, rigani, oregano and marjoram were used in salads and stews. Saffron was used in Morocco, Persia, Saudi Arab for delicate aroma and magnificent yellow colour. Turmeric (oriental saffron) was used with chicken, veal, potatoes and chick peas.

Cooking was generally done over a type of primus called a “Fatayel”. It was a long, slow procedure and pans were sometimes left to simmer overnight, nowadays necessity have passed and cooking is done in oven or tandoor.

Large degs were used for dum cooking by sealing the pot with dough. The utensils were made of copper, brass, silver, beaten or engraved, sometimes inlaid with silver or other metals, sometimes they were having oriental decorative patterns. Traditionally fresh yoghurt is served with the food. It is also used in cooking dishes in Persia, Turkey, Lebanon and the Arab Emirates.

Persians like chees delicately flavoured, sweet and sour, cooked with vinegar, lemon, sugar and sour juice of pomegranate.

Cooking was done in “Alya”, fat obtained by rendering lamb’s tail. Today cooking is done in clarified butter called “Samna” or corn or nut oil. Jews use corn or nut oil in their cooking while copts prefer seasame oil.

Bismillah is uttered by all diners at the table before the meal begins. Twelve rules of etiquette are observed at the meal. The first four are : (1) To know that God is the provider. (2) To be satisfied with what he has provided. (3) To say in the name of God at the beginning of the meal. (4) God to be thanked at the end of the meal. Next four are customary : (l)Wash hands before eating. (2) To sit at the left of the table. (3) To eat with 3 fingers. (4) To lick the fingers after eating. The last four rules are (1) To eat out dish that is immediately in front of you. (2) To take small pieces. (3) To chew the food well. (4) Not to gaze at others. At the end of the meal coffee is served.

The following are a few food specialities of Middle East:

Gebna Beida : It is a fresh cottage cheese from buffalo milk. It is served as an Hors d'oeuvre *i.e.,* (Mezze).

Taramasalata : Creamy mixture made by cod's roe pounded with soaked bread, garlic, onion, lemon juice and olive oil. It is garnished with black olives and served with thin toast. It is a Greek dish.

Cacik Cucumber and Yoghurt Salad : It is a cucumber salad flavoured with garlic, mint, dressed with yoghurt. It is a popular Turkish dish.

Salata Meshwiya : This salad is very popular in Tunisia (North Africa). It is almost similar to salad nisgoise with lemon dressing.

Sanbusak : A savoury pastry from Syria, Lebanon and Egypt, prepared by short crust paste, half moon shape, filled with cheese, egg washed, baked until golden and crispy.

Kotopitta : A Greek chicken pie wrapped in fila pastry or flaky pastry.

Hamud : A chicken soup with calery, lemon juice and garlic.

Beid bi Lamoun : It's a Greek Avgolemono soup.

Melokhia : Egypt's national soup, has chicken stock to which chopped melbkhia (herb), garlic paste (taklia) often meat and chicken balls are added.

Fata : Prepared on Bakrid day in Egypt, by the sacrificed lamb bones and flesh, to which rice is added, flavoured with fried garlic, vinegar and garnished with chopped parsley.

Chakehouka : Tunisian omelette with capsicum strips, sliced onions, tomatoes, whole egg is dropped without stirring.

Blehat-samak : Poached fish, flaked mixed with chopped onion, garlic, parsley, coriander, bread crumbs, cumin, egg for

binding and seasoning shaped in small finger shape, rolled in flour, deep fried. Simmer in fish stock, cool sprinkle with parsley, serve as Horsd'oeuvre.

Ferique: Egyptian chicken dish with whole wheat, hard boiled egg and turmeric.

Shish Kebab : Turkish dish, prepared from diced leg of lamb or beef fillet, marinated in olive oil, lemon juice, rigani, tomato pulp, quartered tomatoes, pieces of onion and sweet pepper are put on a skewer in between the cubes of meat and then roasted.

Egyptian Lamb Stew : The leg of lamb is first roasted, then stewed in stock turmeric, lemon juice, seasoning. Served with rice.

Mefarka : Fried minced lamb, mixed with chopped broad beans, beaten egg, set in mould, serve with lemon juice.

Mishmishiya : It is a lamb stew, thickened with aprieot and almond paste, coloured with saffron and flavoured with coriander, cumin, mastic and cinnamon powder.

Rutabiya : Rutab is Arabic for dates. Minced lamb boil stuffed with almonds and garnished with dates.

Rishta (Fresh Noodles) : In Persian rishta means thread. Fresh egg noodles, cooked and tossed in butter, served hot.

Calsons : Similar to cheese raviote to which the mixture or parmesan, grayere cheese and egg yolk is stuffed.

Couscous : National dish of North African countries.

Bamia : An Egyptian dish, basically lamb and okra stew with tomato condasse and tomato puree.

Seleq : A Saudi Arabian dish, made of lamb, rice cooked in milk. Served with cucumber, lettuce and tomatoes. Pure honey is also stirred in each portion.

Khubz (Eish Shami) : Common bread Middle of East.

Iflagun : It's an Armenian bread made of yeast fermented dough, topped with powdered spices, grated cheese and pista.

Baklava : Greek pastry dessert, prepared from very thin sheets (Fila or Phyllo) stuffed with chopped walnuts, almond, sugar, cut diagonally, baked, pour sugar syrup and serve cold.

Ataif : Arabian pancakes, prepared by yeast fermented batter, shallow fried, dipped in sugar syrup, spread with thick cream (eishta). Sprinkled with chopped pista or almonds on the cream.

DISHES FROM GERMANY

The cooking of the coastal region its dominated by the sea. In Hamburg the city's elegant restaurants serve plaice, turbot and sole frequently on the menus. Excellent shellfish—oyster, mussels, bright red Heligoland lobsters and herrings are delivered fresh to the shops everyday. Chunks of eel, dried fruit and fresh vegetables are cooked in a strong ham stock flavoured with herbs and frequently garnished with dumplings.

From the fertile coastal plain comes some of the finest meat and poultry. Smoked ham and satisages come from the northern and central regions. Mettwurst, a smoked minced pork sausage, Leberwurst, liver sausage are sold throughout Germany. The smoked ham of Westphalia is famous all over the world. The taste of sweet and savoury combinations are enjoyed in Germany with Sauerbraten. Baden, however, is the one region of Germany where the cooking can be ranked as haute cuisine. Hiedelberg boasts of the finest asparagus in Germany.

Spatzle are served whenever there is a rich gravy to be mopped up—with stews, fricassees or a roast saddle of Black Forest venison served in a sour cream sauce. German cooking is wholesome, unpretentious family cooking. Bayerische leberknodetsuppe (Bavarian liver dumpling soup) Sauerbraten, Rotkhol (Red cabbage and Apple), Roast saddle of vension—Baden-Baden style.

Dishes from Spain and Portugal

It has a unique cuisine which can be described as a blend of East and West. Spanish and Portuguese cooking is simple, sober and conservative.

The natural flavour of the ingredients are undisguised by sauces or dressings. Basically a peasant cuisine, it relies on the simple excellence of the natural produce in the most favoured regions. In Spain every province has its own imaginative cocido, stew.

These cocido have been developed to fine degree, around the central plateau of Spain—to derive a simple but fine meal from a single pot *e.g.* cocido madrileno. Chorizo, a rich ruddy brown sausage, with a warmly spiced and smoky flavour, is the essence of Spanish cooking.

Andalusia, the region which is known for gazpacho, a cold tomato-based soup. Paella a la valenciana—the classic finished dish is a colourful, fragrant melange of saffron tinted rice, lobster, shrimp, chicken, clams or mussels and vegetables.

Spanish omelette—may have peas, spinach, mushrooms, garlic, parsley, chopped ham, anchoives and chorizo sausage pieces.

Cocido madrileno—traditionally Spanish stew which has dried and fresh vegetables or a selection of different meats.

Cheese

Cheeses Commonly Used for Cooking

Soups	Sauces	Vegetables Egg, Fish,	Salads Pasta Meat	Snacks Canape Sandwish, Pastry
Grated, Parmesan, Romano, Control, Sardo	Grated Cheddar, Parmesan,	Sliced/ Grated Swiss, Jack, Mozzarella, Cheddar, Romano, Parmesan, Provolone	Sliced / Creamed Roquefort, Gorgonzola, Stilton, Brie, Camembert, Blue	Grated/ Sliced Cheddar, Blue, Brie, Amul, Verka, (Choice)

After Dinner Cheeses for a Chees

Hard Cheeses Sliceable	Semi Hard Cheeses	Blue Veined	Fermented Soft
Tillamook Swiss Gouda	Bel paese Fontina Port salut	Stilton Roquefort	Fromage de Brie Camembert Coulommiers

DISHES FROM FRANCE

France has great climatic variation to the south. The heat of the Mediterranean adds flavour and richness to fruits, vegetables and herbs including the aromatic delights of basil and garlic which are the flavours of Sun. In the east, south-west and centre mountain massifs dictate a tougher, more solid peasant fare, based on chestnuts, cabbage and hard cheeses which can be stored through the winter with grace—notes of trout, crayfish and woodier mushrooms. In the north there is the finest of fish, oyster, lobster which are cooked to perfection in the fine cream and butter.

French cooking has two groups of basic ingredients :

> First there are the fats—olive oil, goose fats and butter. Second are the basic flavourings of garlic, shallot and onion. The regions where olive oil is

used are most firmly determined by the climate. To the west it overlaps with goose fat in the great foie gras regions. To the north it overlaps with butter, as one goes up the Rhone into the Lyonnais and Burgundy. Garlic and olive oil match as they grow abundantly in the Mediterranean region. The shallot is the great flavouring of Boredeaux.

Cooking of France is only fifty years old. It was discovered and recorded in the 1920s after the First World War. It dramatically changed European life. Montaigne who, in the 16th century, travelled in his own country and through Switzerland, Germany and Italy to record the things he ate as well as the things he saw and experienced.

In France cooking is influenced greatly by the commodities available locally, from town to town, even from village to village, local feeling and taste will ensure a variation of cheeses, wine charcuterie cakes and even of bread. At small roadside cafes the menu will vary according to what is available locally. To travel through this country is a gastronomic adventure. The following are some important regions and their traditional dishes:

Brittany, Touraine, Angou and Maine : Brittany is for fish, Oysters lobsters and langoustines are expensive but spider crabs, clams, mussels and scallops are abundant *e.g.* Mackerel a l'americaine, Matelote, Rillettes, Beurre Blanc, etc.

Normandy : Filets de sole normande, Canard a la bigarde, chick with cream and calvados. *Champagne, Picardy, Flanders, Artois :* Filet de soles au champagne. He de France, Paris, Orleanai : Potage crecy, Tournedo Rossini. Alsac, Lorraine, Franche-Comte : Quiche lorraine, Le poule, au vinaigre.

Bvirgundy, Nivernais, Berry, Bourbonnais : Boeuf a la bourguignonne poularde derby.

Lyonnaise, Savoy, Auvergne, Dauphine : Soupe de cantal, gratin Savoyard.

Charentes, Poitou, Limousin, Marche : La Rochelle fish chowder, cuisse de grenouilles a la maraichine.

Guyenne, Gascony, Bearn : Poule au pot (Boiled chicken Bearn Style), Haricots Blanc au beurre de Gascogne (use goose fat).

Langue doc : Cassoulet.

Provence and Corsica : Bouillabaise (fish stew with saffron).

Dishes from England

Britain has been producing and exporting the best of venison, pork, beef, lamb, lobsters and scallops to France. Britain's own native seakale, the most delicious vegetable as well as globe and Jerusalem artichokes, courgettes, aubergines and peppers are grown in abundance in addition to delicious fruits like pears and grapes. The real pleasure of English, Welsh, Irish and Scottish eating is a pleasure on a Sunday lunch for the family, a weekend high tea or a dinner party with friends. Salmon, plaice or scampi are available in abundance. Puddings, for centuries the national theme are good examples. One can try the art of cooking in steak, kidney and oyster pudding, sussex pond pudding, yorkshire pudding. To end the dinner one can try an apple pie, gooseberry fool. Following are some famous dishes:

Cockie-leekie : A Scottish dish, a beef stew with prunes. Smoked Finnan-Haddock with egg sauce : "Finnan" correctly, Findon, is a village near Aberdeen, famous for its cured haddock, by oak smoke.

Potted Crab : Preserving meat and fish in butter has always been a peculiar English habit, served as a first course with toast, or as a lunch dish to be followed with a green salad. Salmon in pastry with herb sauce.

Steak Kidney and Oyster Pudding : A classic English dish from Wales. Shepherds pie, Lancashire hot pot.

Irish stew : a stew from Ireland with meat and potato.

Roast beef, yorkshire pudding : best roasted meat with a delicious crisp better pudding prepared by the housewives in the north of England. Cheddar Cheese from Wales.

Haggis : Stuffed sheep's stomach a famous dish from Scotland.

Bakewell Tarts : from England.

Mince Meat and Pies : Everybody in England eats mince pies at Christmas. There are slight variations in flavour from household to household. The best mince meat includes hard liquor, apart from the steak, is the one used by most people. Original English drink is London Dry Gin. Scotland's contribution is Whiskey Irelands' contribution is stout beer.

Food from Mexico

Mexican cuisine is a delicious experience and worth trying. It is one of the world's oldest cuisines, its true origins are with Mayan Indians, whose civilization rose and fell long before the Spaniards visited Mexico. The best historical reference to Mexican cuisine is records kept by the Spanish conquerors of what they found in the New World. The Spaniards were welcomed into the courts of the emperor Montezuma and found great riches as well as wealth of culture. Great feasts were served each night, composed of many dishes.

The dishes were kept warm on charcoal braziers for the guests to sample. Tortillas were made from cornflour in many different shapes and sizes. Dishes featuring wild game and elaborate sauces were also served. Beans and chillies were used extensively and many kinds were cultivated. Chocolate and fruit drinks were also served toquench the thirst. Tropical fruits, papaya, banana, avocado and exotic guavas were served. The short reign of the French emperor Maximilian and the empress Carlota brought new dimensions to Mexican cuisine. Maximilian brought chefs of Austria, France and Italy to cook for his court. The native population borrowed from the continental

cuisine and added vermicelli, noodles, white continental bread and other delicacies to the native dishes.

During the World War II Germans introduced them to beer, nowadays the beer of Mexico is recognized as one of the finest in the world. A dish, for example, tamales may be cooked in different ways through the country and still be called Mexican. The basic of Aztec times still remains in the recipes, corn beans and chillies are still the life of Mexican cuisine. Tortillas are still made from corn in the traditional way, patted and shaped by hand and cooked on a hot comal (griddle) before being fried as totopos, filled with beans, meat, fish, vegetables or cheese or just served hot as an accompaniment to every meal.

The same dough of tortillas are also vised for making tamales—to thicken sauces and as the base of a gruel like beverage known as Atole. Beans are cooked in earthenware pots and the eaten sparked with chilli. Chillies are grown all over Mexico in 61 different varieties. Chicken, pork, turkey, eggs and cheese are used frequently in the diet. Beef is used in Northern Mexico and fish in the coastal areas. The sap from the Maguey Cactus is fermented to form the local beverage Pulque. Tequila is a famous drink from Mexico. There are 5 recognized meal times each day, few people can afford or desire to eat all 5 meals.

Desayuno—early breakfast, consists of rolls, coffee or chocolate. Almuerzb—brunch consisting of fruits, bread or tortillas, eggs or meat and coffee.

Comida—main meal, consists of 6 courses, appetizers followed by soup, a rice dish, chicken or fish, the entree beans served as a separate course, dessert and coffee. Merienda—served at 6 p.m., sort of high tea, consisting of coffee or chocolate and cookies. Cena—a supper served late and is very light.

Enchiladas—chicken breast rolled in Tortilla. Arroz Roso—Red Mexican rice. Cocada—Coconut and milk pudding. Crepas de cajeta—Burnt milk crepes.

THE DRINKS

Wine gives a luxurious quality to many dishes. In general an inexpensive red wine or a white wine that is not too dry will be suitable for all dishes. It is always safe to use red wine for meat and game recipes. White wine can be used for fish or any pale or delicately coloured dish. White wine may be added to stock to enhance the flavour. Red wines make a dish richer and gives a dark delicious gravy.

The Golden rule is "It's better to use too little than too much." Twice the amount won't make the dish twice as good, on the contrary may be nasty. Fortified and Sweet Wines in Cooking : Traditionally Port is used in jugged hare and Madeira or Marsala in cooking of kidneys. Fortified wines should be used discretely as their alcoholic content is higher, to reduce their alcoholic content the dishes should be cooked longer. The addition of fortified or sweet wines to fruits are very pleasant. These can be used for baked or stewed fruits or can be added to fruit salads or pour over trifles. Gin can be used in chicken dishes. Rum is used with fruits and raisin. Brandy is also frequently used for cooking game, chicken and birds.

Brandy is added to pates, terrines, it can be used to preserve fruits *e.g.* cherries, apricots, peaches and plums, used for moistening and enriching the mixture, it can be used in cakes, mousses etc. Just pierce the surface and inject some—this is called spiking. Liqueurs can be used for spiking, can be used for flambe, it goes well with fruits and plain ice-cream. Bitters—normally a cocktail ingredient have a little role in cooking. Angostura bitter imparts a slightly spicy herb like flavour to the dish, it can be added to sandwich spreads and savoury butter, to salad dressing, to mayonnaise and in stewed fruits or compotes. Cider can be substituted for white wine in many dishes especially white wine dishes with fish. Do not mix cider with cooking wine.

7

Food Stuff

Milk and Water

About sixty to seventy per cent of the total body weight of a person is water. Water is present inside the cells of tissues (the intracellular water) and outside the tissue cells (the extracellular water). The extracellular water is present in the blood plasma, water in the space between the tissues is known as interstitial water and in lymph.

Water and electrolytes are essential constituents of cellular metabolism. It is not only a component of our body but also acts as a vehicle for chemical transport. Water and electrolytes must be supplied to the body regularly to maintain the cellular function and to regulate the excretion through kidneys, lungs and skin.

Role of Water

Water intake and loss must be balanced. Water is in jested through food and also as drinking water. Apart from this, a considerable amount of water is formed in the tissues through the oxidation of carbohydrates, fats and protein in their metabolism.

Water Intake and Loss from the Body

Water intake	***(Ml)***	***Daily excretion***	***(Ml)***
As fluids	1,500-1,750	Urine	1,200-1,500
Water in solid food	600-900	Perspiration	700-900
Water from oxidation of carbohydrate, protein, fat metabolism	300-350	Faeces	100-200
Total	2,400-3,000		2,400-3,000

Water is lost through urine, skin, lungs and faecal matter. In a normal healthy person the- water intake and water loss is more or less equal. The excretion through the kidneys and skin changes according to the climatic conditions. In a dry climate more perspiration and in the cold weather more urination takes place. If the fluid intake is less thirst occurs. When two per cent of the body weight is lost dehydration starts.

Water is absorbed quickly and it is circulated to the tissues. From the tissues water is passed on to the capillaries. The capillary walls and cell membranes separate the water compartments. Water can move in and out of all cells by osmosis. The osmotic pressure in the plasma proteins regulates the exchange of water from tissues to capillaries. Antidiuretic hormone of posterior pituitary, hypothalamus, electrolytes like Na and K and adrenal cortex hormone aldosterone regulate the water metabolism in the body.

Antidiuretic hormone of the posterior pituitary increases the reabsorption of water in kidney tubules by increasing the permeability of distal tubules and collecting tubules. This mechanism enables them to retain more water in the body.

Hypothalamus is having the thirst centre. In dehydration plasma is concentrated and osmoconcentration stiumulates the thirst centre of hypothalamus. This induces the person to be very thirsty. By taking water the water balance in the body is regulated.

Various solutes present in the body fluids also help to regulate water metabolism. Plasma proteins exert low osmotic pressure and this helps to maintain the water in the blood vessels. Aldosterone increases reabsorption of Na by the kidney.

About 170 litres of fluid pass through the glomeruli of the kidneys daily. A healthy person's kidneys excrete about 1.5 litres of urine from the above fluids. The urine formation is reduced if the intake of fluids is less. Then the urine becomes more concentrated with urea which forms the main bulk in urine. The normal output of urea is 30 mg for which 750 ml of urine must be formed. If urine formation is less urea is retained in the body which is harmful to the body; when less urine is formed in summer season more sweat is formed. Excessive sweating occurs with increased external temperature and humidity, fever and exercise. Water is also lost through insensible perspiration.

Apart from maintaining the intracellular and extracellular water metabolism, water also takes part in a number of activities. All the vital functions of the body depend on the presence of proper water content. Digestion depends on its juices and all digestive juices are watery in nature. Urine, the excretory medium of our body, contains 97 per cent water. Water also helps in regulating body temperature. By evaporation of water, by respiration and through sweating the body temperature is regulated.

Requirement of Water : Water requirement of a person varies with climate, age, activity, dietetic habits and body build. Activity is an important factor which affects the water requirements. When activity is more intense more heat is produced and more water is needed to dissipate the heat produced. The type of diet also influences the water requirement. A high mineral content increases the water requirement. Consumption of sweets demands extra water for their dilution in the stomach. Beverages like tea, coffee and cocoa are diuretics and they stimulate excretion of water. If excess water is injested

the kidney responds to it after 13-50 minutes and the extra water is excreted within three hours. The water balance will be maintained by the excess urine output. The sensation of thirst is one means of meeting the body's need for water.

Dehydration : Water depletion occurs when water loss is not met by water intake. On water depletion changes occur in the body fluids. Thirst, weakness, loss of weight, dryness of the skin, mucous membranes, tachycardia, disorientation and delerium are the symptoms manifested by dehydration. If not corrected coma and death occur. The urine changes in its specific gravity and concentration. The salt level is diminished in the urine and serum levels of sodium, urea and chlorides are elevated. Intercellular water is depleted to compensate the water content of the secretions. This results in cellular dehydration and vital organs fail to function. Plasma volume and blood volume are reduced which leads to reduced output and further cardiac failure.

Acid-base Balance : Acid-base balance refers to the regulation of the hydrogen ion concentration of body fluids. From metabolic processes acids are continuously produced and have to be eliminated. Lungs and kidneys are the major agents in carrying out this function in our body. Normally the body is maintained in neutrality. In some pathological conditions like diabetes mellitus or fasting for weight reduction and in renal failure the acid-base balance is affected. Acidosis occurs in this conditon.

Carbonic acid is the main form of acid formed in the body from metabolism. Carbohydrates, protein and fats yields CO_2 and water during their metabolism. The hydrated form of carbon dioxide is carbonic acid. Intermediary products like lactic acid, pyruvic acid, keto acids, uric acid, sulphuric acid, phosphoric acid from phosphoprotein are acidic in nature.

Certain foods in the body produce alkaline ash as the cations (Na^+. K^+) will allow the body to retain more bicarbonate

ions thus producing alkaline effect. The neutrality of the body is maintained through the body fluids and their circulation, the acid buffer system like bicarbonate carbonic acid through haemoglobin and its capacity to form carbamale, regulation in respiration and the final effort from kidney on emergencies.

Acidosis : It is a condition in which the hydrogen ion concentration is increased or there is an excessive loss of base. The ratio of bicarbonate to carbonic acid is less than 20:1 and the pH is below 7.35.

Alkaksis : This is a condition in which the hydrogen ion concentration is decreased or the base is increased. The ratio of bicarbonate to carbonic acid is greater than 20:1 and the pH is 7.45.

Role of Milk

Milk is commonly considered as a complete food as it contains all six of the essential foodstuffs. Milk protein is of excellent quality and it promotes growth and maintenance of body tissues. Therefore, milk is an ideal food for infants and children. But milk is very low in iron and ascorbic acid content Calcium and phosphorus levels in milk are very high.

The ratio of calcium and phosphorus and the presence of vitamin A help its maximum utilisation. Milk is an excellent source of vitamin A. In it the cream is rich in vitamin A and if the same is removed as in slammed milk, its vitamin A content becomes low. Riboflavin, a B vitamin, is present in significant quantities in milk. If the milk is exposed, to light riboflavin is lost. Fats present in milk are readily digested.

The carbohydrate of milk is lactose and it is hydrolysed into glucose and galactose. Whole milk contains 4.7 per cent carbohydrate, 4 per cent fat, 3.3 per cent protein and 88 per cent water. Fats in the form of oleic, palmitic and stearic acids is present in milk. Milk protein is casein and whey protein has lactalbumin and lactoglobulin.

The Average Composition of Milk and Milk Products (gm\100 ml)

Milk product	***Protein (gm)***	***Fat (gm)***	***Calcium (mg)***	***VitA. (I.U.)***	***Vit.C. (mg.)***	***Calories (kcal.)***
Buffalo's milk	4.3	8.8	210	160	3	118
Cow's milk	3.2	4.1	149	150	2	67
Buttermilk	0.8	1.1	30	...	...	15
Skimmed milk	2.5	0.1	120	...	...	*29*
Condensed milk	9.1	8.4	280	430	...	328
Cheese	24.1	25.1	790	273	...	348
Goat's milk	3.7	5.6	170	60	2	84
Human milk	1.0	3.9	20	70	3	67
Curd	2.9	2.9	120	40	4	51

In developing countries, the per capita availability of milk is poor whereas in developed countries it is more.

Among these buffalo's milk has a higher proportion of total solids and fats than cow's milk. Casein coagulation is also high.

Goat's milk is rich in cream and poor in protein compared to buffalo's milk. Human milk is easily digestible because it becomes solid on reaching the stomach. Casein is the chief protein of milk. It is a phosphoprotein which contains protein and phosphoric acid. An enzyme rennin aggregates and precipitates casein and it is coagulated or curdled. Bacterial action also curdles milk. Casein is present in milk in the form of calcium caseinate. Rennin converts calcium caseinate into calcium and paracasein.

Again it forms a smooth, soft clot of calcium paracaseinate which is non-dispersible. If milk is overheated it forms a weaker clot. Dried milk also forms a weak clot. Milk also contains lactalbumin, a simple protein of the albumin class. Prolonged and direct heating of milk also forms a weak clot. Milk also contains lactalbumin, a simple protein of the albumin class. Prolonged and direct heating of milk helps it to settle down at

the bottom and sides of the container in which milk is heated. Use of double cooker rectifies this. The souring of milk is due to the presence of lactose, the carbohydrate. Lactic acid-forming bacteria use lactose as food to produce lactic acid in milk.

Fat is present in emulsified form. Creamy layer of milk consists of fats. Milk contains potassium, sodium, calcium and magnesium chlorides and phosphates. On heating milk calcium precipitates on the sides of the container. Of all food materials milk is the best source of calcium and careless heating reduces its availability. Even though iron is present in minute quantities it is highly nutritional.

Processing of Milk

Pasteurisation of Milk : Milk is a favourable medium for bacterial growth. Louis Pasteur, the French scientist developed the heat treatment of milk for inactivating disease-causing micro-organisms.

Milk-borne diseases are tuberculosis, typhoid, hoof and mouth diseases, undulant fever, scarlet fever, septic, sore throat gastroenteritis and diphtheria. But pasteurisation destroys certain advantageous bacteria also. There are two methods of pasteurisation—the flash method and the holding method. In the flash method the milk is heated at a temperature of 160^{o}F for 30 to 60 seconds and in the holding method the milk is heated to temperatures of 140^{o} to 145^{o} F and held there for at least 30 minutes. In both the methods, after the heat treatment, the milk is cooled quickly to about 43^{o} F. Pasteurisation reduces the thiamine and ascorbic acid content whereas the nutritive content of other vitamins is not much affected.

Evaporated Milk : Evaporated milk is produced by evaporating 60 per cent of water from milk and the product is then sterilised and sealed in cans. To evaporate, the milk is heated at a high vacuum from 130^{o} to 150* F. The concentrated product is homogenised to reduce the fat globules and then

placed in cans, heated and sterilised at temperatures from 240^o to 245^o F for IS minutes. Evaporated milk is fortified with vitamin D.

Condensed Milk : Evaporated milk is incorporated with 40 per cent carbohydrate to form condensed milk. Sucrose or dextrose or a mixture of these two is added.

Dry Milk : Whole milk or defatted whole milk is used in its preparation. From milk most of the water is removed. There are two methods applied to form dry rajlk-spray process and roller process. In the spray process fresh milk is sprayed under high pressure into a drying chamber where dry air is passed. The current of dry air evaporates water and the dried solids settle to the bottom of the chamber.

In roller process fresh milk is spread over the surface of hot revolving metal rolls. The water evaporates and milk solids remain in thin sheets. If the fat is removed from whole milk the keeping quality is more. Dried whole milk does not keep so long because the fats tend to become rancid.

Milk Products: Consumption

Cheese, yoghurt or curd, buttermilk, low-fat milk, non-fat milk cream and butter are the common milk products used.

Cheese is mainly from casein of milk with fat and a little whey. To precipitate cheese lactic acid or rennin are used. For commercial cheese making rennin is used and for homemade cheese lactic acid is used.

Cheese is rich in protein and fat and a considerable amount of lactose is also present. In homemade cheese calcium is less but other minerals like phosphorus are there in both. Compared to milk vitamin A content is the same but thiamine and riboflavin are dissolved in the whey. Cheese is used to spread in items like butter as it contributes flavour. In vegetables, fish and meat preparations and in custards and souffles cheese can be used.

Low temperature is suggested for cheese cookery. Buttermilk is prepared from curd; it is churned and the butter removed. Yoghurt or curd is a custard-like product prepared by fermenting milk.

In commercial production streptococcus thermophilus is added to milk to ferment it. Low-fat milk is commercially prepared for people who prefer low calories from milk with a fat flavour. Non-fat milk is skimmed milk where the fat is removed entirely. Vitamin A and D are fortified in it. Creams with different levels of fats are commercially produced.

The fat content ranges from 18 to 40 per cent. Cream combined with sugar, stabilisers and emulsifiers is often sold in cans. Commercially, cream is prepared by using a cream separator which enables the separation of fat at different levels. Whipped cream is an air-in-water foam in which fat globules are piled up in the film and it is used in salad dressings and in desserts.

Milk is used in many preparations for its solvent capacity and its nutritive contribution. Milk is used as a dispersing medium, especially in puddings and for scum formation with its coagulating property. Vegetables with tannin or acid cause milk to curdle. Scum formation and curdling occur when the protein in milk becomes insoluble in heat or in the pH change. Use of low temperature and short heating periods prevent scum formation. Acidity of the content produces curdling. Adding acid food towards the end and mixing it in low temperature reduce curdling.

Types of Milks in the Market : Homogenised milk, separated milk, toned milk, sterilised milk, separated milk (skimmed milk), recombined milk, filled milk and flavoured milk are the common fluid milks available in the market.

Homogenised Milk : In this, fat globules are broken up mechanically to less than one microne in diameter. It is easily digested but cream is not obtained on separation.

Separated Milk (Skimmed milk) : This is prepared by removing fat from milk in a cream separator. Very little fat is in it.

Toned Milk : Toned milk is prepared by mixing milk reconstituted from skimmed milk powder with buffalo milk which has 7.0 per cent fat.

Recombined Milk : It is a homogenised product prepared from milk fat, non-fat milk solids and water. It should be pasteurised.

Filled Milk : Filled milk is the homogenised product prepared from refined vegetable oil and non-fat milk solids and water.

Sterilised Milk : Cow or buffalo milk is sterilised in bottles by fixating to l5 minutes.

Flavoured Milk : Chocolate, coffee, cardamom or any other edible flavours, colour and to flavour milk.

Flesh of all edible animals including mammals and poultry is termed as meat. Meats of cattle origin, beef and veal, of hog origin, pork, sheep, lamb, mutton, flesh of partridge, duck and game birds are used commonly as food.

Eating Meat

Muscle of meat is composed of 75 per cent water, 20 per cent protein and 5 per cent fat, carbohydrate and minerals. The composition of meat varies with its sources, season of the year and pH of the meat. Protein comprises about four-fifths of the solid material. True fats, fat-like substances called phospholipids, inorganic substances and vitamins are present in fats.

Veal is the meat from cattle slaughtered three to fourteen weeks after birth. Calf is from fourteen to fifty-two weeks old animal. Beef is from cattle over one year old. A heifer is a female cattle that has never borne a calf and a cow is a female cattle that has borne a calf. Meat has skeletal or muscular cuts and

organ cuts. Skeletal or muscular cut has muscle, tissue, connective tissue, bone fats and nerve tissues. Muscle tissue and connective tissue supply the qualities of meat in cookery. Muscle structure is made up of bundles of muscle fibres called fasciculi. Connective tissues are scattered throughout the muscles where they play a connecting and supporting role. White fibrous and yellow elastic fibres with proteins like collagen and elastin are present in all muscles.

Collagen contributes strength and elastin supplies elastic quality to meat Collagen reacts with water in hydrolysis to produce gelatin and brings about a tenderising effect to the meat. But no sack change is brought in elastin and if elastin is more in muscle fibres meat will be hard even after cooking. This can be remedied by chopping or grinding the elastin fibres.

Fats in meats are distributed between fasciculi. Fat is laid as a protective layer around the organs. The fat deposited with the muscle structure is known as marbling. Muscle haemoglobin is present in small amounts. Muscle cells of living animals contain glycogen which is otherwise known as animal starch. But immediately after the animal is dead glycogen is converted into lactic acid. The vitamin content of different meats varies. The B vitamins—thiamine, riboflavin and niacin—occur in significant amounts in all meats. The meat of hog origin is rich in thiamine liver is rich in vitamin A. Iron-containing substances and B vitamins are more in organ meats.

Rigor Mortis : After the animal is slaughtered certain changes occur in the meat and it stiffens. This process is known as rigor mortis. On slaughtering the animal adenosine triphosphate is synthesised from glycogen and lactic acid, ammonia and other products are formed from it. Myosin and actomyosin are found in contracted muscles and stiffening occurs to it.

If the slaughtered animal has a high glycogen level, it produces a low pH and the quality of meat will be good with

less rigor mortis. Fasting, exercise, nervous exhaustion or insulin injection cause low glycogen level and the carcass has a high pH. Undesirable dark colour and poor flavour and texture of meat result from this. Slow and long slaughter produce more adrenaline in the animals and this results in sticky, gummy and dark coloured meat. Rigor mortis reaches its peak within 24 hours and then the muscle softens.

Quality and Grading : Appearance, tenderness, juiciness and flavour of the meat decide the quality of meat. Good quality flesh must be firm, the fasciculi should be small and velvety in texture, with characteristic colour of the meat-bright cherry red for beef, pinkish-red for lamb, greyish pink for veal and pork; bone must be small, red and spongy in appearance and the fat must be white and firm. To grade the meat quality grades are given and they are prime, choice, good, commercial, utility and cutter and conner.

For lambs and veal cull is the term used instead of utility. For pork grades of 1,2, and 3 are used. Meat of top quality is more tender than lower quality grade. Tenderness of meat increases palatability and it varies according to the cuts of meat. The most tender cuts are from backbone and ribs. Less tender cuts are from the shank, shoulder, neck and under parts of the body. Under part cuts of beef are flank, plate and brisket. The same cuts from lamb and veal are known as breast.

Meat Cookery : Palatability, appearance and flavour are enhanced by cooking meat. Cooking also makes meat more tender and digestible. There are two methods generally applied to meat cookery—dry heat and moist heat methods. In all methods of cooking the interior of the meat changes. Heat penetration, substances added to meat and composition of the meat affect these changes.

Mainly the method adopted for cooking depends upon the cuts of meat. Less tender cuts contain more connective tissues than tender cuts and so moist heat methods convert collagen

to gelatin and it has a tenderising effect upon tissues. Roasting and broiling are the methods used to cook by dry heat methods and these methods can be applied to tender cuts of meat. For less tender cuts moist heat methods are used. Moderate temperature is recommended for this method. Water, juices and fluids are used for most heat methods. The addition of sodium chloride or sodium and potassium phosphate has been reported to increase the tenderness of meat.

Dry Heat Methods : *Roasting:* Roasting is cooking by means of radiant heat. Meat is roasted either in the open or in a closed tin in an oven. In covered roasting evaporation is diminished, and it cooks faster too. The water runs out of the meat instead of evaporating from the surface. An enclosed roast loses more weight and water than the open roast. Cooking to rare stage only increases the juiciness and flavour. If the pieces of meat lack fat, a thin layer of fat on top will be very effective. Water should not be added to oven roast.

Broiling and Pan Broiling: Slices from tender cuts of meat can be cooked rapidly without adding moisture or fat by radiant heat from a broiler or in an uncovered pan. The time required depends on the stage of cooking required and the size and shape of the pieces. This method gives a uniform result. The temperature should be higher than in roasting. It can be regulated either by changing the heat input or by changing the distance of meat from the heat source. This method is suitable for cooking tender cuts of beef and lamb or ground meat on the pattern of ham, bacon and sausages.

Frying : Meat is fried when it is partly or completely immersed in hot fat during cooking. When the meat is completely immersed the method is called deep-fat-frying. When a small amount of fat is added it is called pan-frying or sauteing. The fat should be kept below smoking point. A temperature of 350° F for pre-cooked meat and 300° F for raw meat is usually satisfactory. This method is suited to lean meats such as liver or cooked steak.

Cooking by Moist Heat: The cooking medium is steam of water.

Braising and Pressure Cooking: Meat may be cooked in steam with or without pressure. When the meat is first browned in its own fat or a small amount of added fat and allowed to cook in its own steam without pressure the method is known as braising. Meat braised as a large piece is called a pot roast and that as small pieces, a fricassee. Braising is preferable to boiling for fresh pork, because it produces less hardening and drying of fibres when meat is cooked to a safe stage of cooking.

Stewing or Simmering: Meat may be cooked by immersing it in water. To minimise the hardening effect of high temperature simmering is preferable to boiling. Vegetables are added to stews to enhance the flavour.

Generally shrinkage of meat cooked by moist heat method is greater than that in dry heat methods.

Tenderising Meat : Papain, an enzyme derived from papaya, tenderises beef. Solution of papain is often injected into the beef shortly before slaughter. Meat of old animals is tough and stringy and usually this meat requires tenderising. Tougher cuts of meat require a long, slow cooking period. Prolonged cooking changes collagen into gelatin in moist heating. Dry heat hardens it. Acid hastens this conversion of collagen into gelatin; tomato juice and vinegar tenderise meat. High temperature gives a tasteless dry-product-like quality to tough meat. Cutting the tough meat into smaller pieces enhances the flavour of meat. Mining, grinding or pounding of meat helps to break the muscle fibres.

Vitamin retention is more in dry heat methods. Roasting or broiling retains 65-70 per cent of thiamine whereas moist heat retains only 25 per cent of thiamine.

Gelatin : Gelatin is a protein obtained from collagen on hydrolysis. Connective tissues of cartilage, tendons, bones,

skins and hoofs are used to prepare gelatin. After preliminary treatments a dispersion of collagen in water is obtained. And this dispersion is boiled for several hours. Water is evaporated and gelatin is obtained from collagen.

From the nutritional point of view gelatin is inferior because it is an incomplete protein. The property of gel formation is used in cookery. In desserts gelatin is used to provide a spongy appearance to the product.

Processing of Meat : Canned meat, cured meat, smoked meat, dehydrated meat and sausages are the common processed form of meat.

Canned-meat : The meat is cooked and filled in the can along with the gravy, leaving a little head space.

Cured-meat : Meat is pickled by the use of curing agents like sodium chloride, sodium nitrate and vinegar.

Smoked-meat : Smoking helps to preserve the meat and develop flavours in it The temperature and period of smoking vary with the type of meat

Dehydrated-meat : The meat is cut into pieces and cooked in steam for 30 minutes at 10 lb pressure. It is passed through a meat chopper and the chopped meat is dried in a drier.

Sausages : Cooked chopped meat is ground to a paste with seasonings and packed casings. It is available as fresh, cooked, smoked, cooked and smoked, dry, and semi-dry.

Eating Fish

Fish is a very good source of calcium, protein, vitamins A, D and iodine. There are two main classes into which fish may be grouped as vertebrate fish or fin fish and shell fish. Cod, mackerel and salmon have backbones and fins, whereas a shellfish is more or less completely covered with a shell. Oysters, lobsters and crabs are examples of shellfish.

Protein is the main component in fish and its content ranges from 15 to 20 per cent by weight of flesh. The fat content in fish varies from 1 per cent to 20 per cent or more. Hilsa has a fat content of about 19.4 per cent. The fat content of shellfish is less than 5 per cent.

Since the fats in fish are unsaturated fats even in therapeutic diets this can be recommended. The flesh of fish is devoid of carbohydrates except in the case of shellfish.

The mineral content of fish is variable; 1 to 1.5 per cent of the flesh of fish is with mineral elements. Small fish which can be consumed with their bones are rich in calcium. Oysters and shrimps are rich in calcium.

Most fishes are not very good sources of iron except oysters. Sea fish are high in iodine content. Oysters are also rich in copper. The flesh of most fish contains fair amounts of thiamine and riboflavin and some amounts of niacin. Fatty fish are rich in vitamins A and D. Fish livers are rich sources of these vitamins.

Freshness of Fish : Fish deteriorates quickly and so requires careful handling. The quality of freshness of fish is indicated by bright red gills, clear eyes, bright and slightly bulging but firm flesh when pressed with a finger, and elasticity. The fresh odour of fish suggests its freshness. Suggestion of putrefaction is easy to detect from its foul smell. The tail of a fresh fish is stiff.

Spoilage of Fish : Fish is highly perishable. The spoilage of fish is due to microbiological, physiological and biochemical changes.

Processing of Fish : Fish protein concentrates, fish meat, smoked and salted fish are the common forms of processed fish. Fish protein concentrate is used for supplementing diets.

Fish meals is not suitable for human consumption. It is used for poultry and for animal ration.

Preservation of Fish : Cold storage, freezing, canning and drying are the common methods of preservation of fish. Salting before drying is essential.

Eating Eggs

Eggs are used in many preparations due to the variety they provide to food. Eggs are important ingredients of recipes for breakfast, lunch or dinner for any person. Nutritive importance, flavour, pleasing colour, thickening power, foam-forming ability, emulsifying capacity, stabilising capacity and the binding property of eggs are utilised in menu planning.

An egg has two parts—outer egg-white and inner egg yolk. The egg is held in position in the shell by two membranes which lie close together. About 63 per cent by weight of an egg is made of egg-white. It has three layers—an outer portion of thin egg-white, a thick jelly-like layer and a thin portion which surrounds the yolk. The central part of the egg is the egg yolk, and the yolk is surrounded by a thin covering called vitellin membrane.

The egg-white is rich in protein. Albumin, globulin and mucin are the proteins in egg-white. It is easily coagulated by heat and it provides the jelly-like character of thick egg-white. Minute quantities of sodium, potassium, magnesium, calcium, clorides and phosphates and riboflavin are present in the egg-white.

The egg yolk contains ovpvitellin as the proteins and it is phosphoprotein, and it resembles -(he casein of milk. The egg yolk is rich in fat, that is, about one-third of the yolk is fat, especially of cholesterol and lecithin variety. The fats in egg are finely dispersed and are in emulsified forms. The mineral content is more in egg yolk compared to the white. Egg yolk is an important source of iron and it is also rich in sodium, potassium, calcium and magnesium. Lipovitellin and lipovitellinin are the lipo proteins in egg yolk which act as emulsifying agents. Egg yolk is rich in vitamins, especially thiamine riboflavin, vitamins A and D and their content in egg depends upon the hen’s diet.

The whole egg is a rich source of all nutrients except vitamin C. The protein in egg is considered as a complete protein because of its high biological value and digestability. It is often mentioned as reference protein. But a raw egg-white contains a protein known as avidin which renders the vitamins biotin unavailable to the body. Duck egg-white contains another substance known as trypsin-inhibitor which inhibits the action of trypsin on protein. Heating destroys avidin and trypsin-inhibitors.

Role of Egg : Egg protein coagulates on heating. The coagulum formed is a smooth and jelly-like mass. It supplies a thickening effect to the products. If the temperature is high, the coagulum is toughened and it shrinks and water comes out of the product. This is called syneresis and it occurs in custards and scrambled egg preparations.

Egg is cooked in its shell, scrambled, poached, fried or used in the preparations of deserts, and cakes and other confectioneries. Egg is used in food mixtures to contribute flavour and colour to the products. Cakes and puddings owe their colour and flavour to eggs. In the preparation of mayonnaise the protein of egg stabilises the oil in water dispersion. The protein of egg stabilises the air in liquid dispersion. Egg is also used for thickening various desserts and creams and patties. Since egg is highly perishable the quality has to be judged by internal appearance flavour and external shell appearance.

Candling : Candling is used as a method to detect the interior quality of egg. In a closed box with a small opening a lighted candle has to be placed. The depth of air cell can be observed by placing the egg in front of the opening.

In a fresh egg the white is stationary and slight movements of yolk are permitted by the white. Yolk is in the centre and it does not move nearer to the shell. In a poor quality egg the yolk moves. The shell of good quality egg is firm and not stained or cracked.

Formation of Dark Greenish Discolouration : When egg is boiled for more than 15 minutes a dark greenish colour may be formed on the surface of the egg yolk. This green colour is due to the formation of FeS on the surface of the yolk.

Yolk contains more iron and the white has more sulphur in its amino acids. On boiling it yields H_2S. The H_2S combines with the iron of the yolk and it gives the dark green colour in the middle. In high temperature this change takes place immediately.

VEGETABLES AND FRUITS

A fruit is the edible fleshy seed-bearing part of a plant or tree. Fruits are favoured by all due to their attractive appearance, appealing flavour and pleasing odour. Apart from their nutritive value they are also appreciated for their appetising effect.

Fruits contain starch. On ripening the starch is converted into fructose and glucose and these sugars contribute to the sweetness of fruits. Water is the chief constituent of fruits.

About 75 to 95 per cent of the total weight is from water. Fruits as a whole are rich sources of vitamin C and vitamin A and minerals like sodium, potassium, magnesium, fibre and cellulose. Characteristic flavours of fruits are due to the presence of organic acids in them.

Citric acid and malic acid are the acids present in fruits. Grapes contain tartaric acid. Acid content of various fruits varies. Citrus fruits are the best sources of vitamin C. Dried fruits like raisins, dates and figs are rich in iron. Calcium is present in citrus fruits.

Banana contributes a very high amount of carbohydrates and about 23 per cent of it is sugar. Jackfruits, figs and cherries are also very good sources of carbohydrates. For vitamin C guava is a cheap source. About 300 mg vitamin C is present in 100 gms of guava. Cashew fruit is also an excellent source of vitamin C. Lime, mango, papaya and orange are other sources of vitamin C. Fruits have alkaline reaction in the body.

Fruits: Benefits

Fruits with different colours have carotenoids, anthocyanins and flavanols in them. Fruits also contain enzymes like ascorbic oxidase and phenol oxidase. The vitamin A value of fruits is in the carotene in yellow fruits. Organic acids and salts are present in fruits. Dried fruits like dates and raisins are sources of iron. Potassium is the most important salt in fruits. Potassium is present in citrus fruits as citrates and in grapes as tartarate.

Pleasing colours of the fruits are due to their pigment content. In ripe fruits carotenokl pigments are present in different forms. Red, purple and blue shades of fruits are due to the presence of anthocyanine pigments in them.

Tannins and Browning Reaction : Tannins are present in almost all fruits. They contribute bitter taste and astringent quality and discolouration of cut surfaces of fruits on exposure to air. When certain fruits are pared a brown colour appears on their surface which becomes darker as the fruit is allowed to stand.

Apple, banana, plum, guava and peach show this change. Tannins and flavone pigments give brown coloured pigments on oxidation. Oxidising agents present in fruit cells catalyse the reaction. If the fruits are cut with an iron knife, tannins and flavones react with iron salts forming a greenish purple compound which discolours the fruits. Acidic juices of fruits like lime, grape or pineapple are sprinkled on the fruits to prevent browning action.

Enzymatic browning occurs only when the fruits or vegetables are cut into pieces. The natural phenolic compounds present in tissues of plants do not come into contact with the phenoloxidase which is also present in some tissues. Practical methods for preventing enzymatic browning are to change the pH and the use of anti-oxidants which retard oxidation. By using the acidic juices of fruits the pH can be brought down.

Non-enzymatic browning occurs due to the formation of brown condensation products from reducing sugars and amino acids on heating. To prevent non-enzymatic browning storing the food materials at a low temperature, between 0° and 5°C, and addition of sulphur dioxide in the case of dehydrated vegetables are recommended.

Browning reaction affects the nutritive value of food, especially the lysine content of it. Loss of nutrients of fruits on cooking is negligible.

Prevention of Browning : Thermal inactivation of oxidase enzymes, elimination of O_2 from the systems, change of pH to prevent enzyme action, and use of antioxidants are the measures to prevent enzymatic browning.

For non-enzymatic browning low temperature (0^{o}-5°C), addition of SO_2 and keeping the moisture content low are some measures.

VEGETABLES: PLUS POINT

Edible parts of plants like bulbs, tubes, roots, seeds, fruits, stems, leaves or flowers are considered as vegetables. Vegetables as a whole are important sources of minerals and vitamins and certain vegetables have starch, cellulose and water. In meal planning and for dietary calculation vegetables occupy a prominent place. To check their sufficiency and also for convenience, vegetables are grouped into green leafy vegetables, and roots and tubers and other vegetables. Legumes like double beans, french beans, cluster beans and peas are also included into other vegetables. Vegetables are the best sources for calcium, iron, sodium, chlorine, cobalt, copper, magnesium, manganese, phosphorus and potassium.

Carotenes, the precursors of vitamin A and ascorbic acid are present in abundant quantities in leafy and yellow vegetables. Vegetables are poor sources of calories except in the case of roots and tubers. Raw legumes and beans are good sources

of proteins. Vegetables as a group supply a high amount of water and the mineral elements present in them contribute the alkaline substances in the body. This enables to maintain the acid-base balance of the body.

Cabbage, cauliflower, coriander leaves, lettuce, spinach, amaranth and drumstick leaves are the common leafy vegetables. Of all the vegetables green leafy vegetables are the richest in carotene and the carotene content depends upon the green colour. If the colour is deep the carotene is more in it. Green leafy vegetables are fair sources of proteins and good sources of folk; acid, ascorbic acid and calcium. Some leafy vegetables contain oxalic acid which interferes with the absorption of calcium in the diet. Leafy vegetables act as a buffer and maintain the Proper alkalinity of the blood by balancing the acidity of acid-producing foods like meat.

Roots and Tubers : Roots and tubers are good sources of starch and fair sources of protein, vitamin B and vitamin C. Roots and tubers include tapioca, potato, sweet potato, carrots and beetroots. Carrots are rich sources of Vitamin A. The starch in roots is easily digestible. Potato, a root vegetable, is a fair source of proteins, ascorbic acid, and B vitamins. Sweet potato is a poor source of proteins but it is a fair source of B vitamins and ascorbic acid. The yellow variety of sweet potato is a rich source of pro-vitamin A or carotene.

Other Vegetables : Other vegetables are good sources of minerals, cellulose and water. They are also good sources of vitamins. Common vegetables like ladyfingers, gourds, brinjals, pumpkins, green peas and all other vegetables fall in group Tomato is also considered as another vegetable. Green peas and yellow pumpkin are fair sources of carotene.

Cooking of Vegetables : Cooking affects the colour, texture and nutritive value of vegetables. Cooking methods can destroy the good qualities if not handled properly. Common methods of cooking are boling, steaming, baking, frying and pressure

cooking. Before applying these methods the chemical structure of vegetables must be considered. Vegetables contain different chemical compounds like pigments, tannin, enzymes and flavouring substances. Common pigments in vegetables are chlorophyll, carotinoid, flavones and anthocyanins. On heating these pigments undergo certain chemical changes which affect the colour of the finished product. Vegetables also lose organic acids and nutrients in cooking water. Acid or alkali content, and the cooking media also affect the appearance and quality of the product

Chlorophyll : Chlorophyll is the green pigment in leaves which is not readily soluble in water. In an acid medium chlorophyll turns an olive green and in alkali it becomes bright green. But the use of alkali to retain the green colour in salad vegetables destroys vitamin C and thiamine. Cooking in copper vessels turns chlorophyll into deep bluish green colour. Addition of sodium carbonate affects the texture and the cellulose becomes mushy.

Cooking with a lid and in minimum time retains the colour . The Carotenoid is yellow orange in colour and insoluble in water. It is soluble in ether and acetone. Carotenoids are present in different forms like carotenes, Ly copence, xanthophylls, cryptoxanthin and citroxanthin. Carotenoids are present in yellow vegetables like carrots, sweet potatoes, tomatoes, and xanthophyll in all vegetables. Cryptoxanthin is present in papaya, orange peel and yellow maize. Carotenoids are unchanged in acid or alkali and so vegetables with carotenoid pigments may be cooked with a cover. Such vegetables can be cooked by any method as the carotenoids remain unaffected.

Flavanoids : Flavones and flavonols are together known as flavanoids. Anthocyanins, anthoxanthins, leucoanthoxanthins and catechins are together known as flavonoids.

Anthocyanins are reddish water soluble pigments occurring in fruits and vegetables. They are destroyed by heat and oxidation.

Passion fruit, apple, cherry, plum, grapes, blackberries are some of the fruits with anthocyanin in them. Beetroot has anthocyanin as its pigment Anthocyanin is water soluble and in acid medium it turns blue. In some vegetables flavones and anthocyanin are combined together which gives a green colour on cooking in alkaline medium.

Another chemical substance present in plants is tannin. Tannin and ferric salts form a greenish purple compound. On oxidation this turns brown which imparts a brown colour. Certain vegetables show discolouration if an iron knife is used to cut it. If vegetables rich in tannin are cooked in milk, the milk curdles.

Effect of Cooking : At a high temperature the cellulose is disintegrated and protopectin, a non-dispensible substance in water, undergoes hydrolysis and makes it dispersible. This changes the structural framework of the vegetables and makes it soft. If it is overcooked the vegetable becomes mushy and unpalatable. Some vegetables lose their natural flavour on cooking. Strong flavoured vegetables like onion, cabbage and cauliflower must be cooked by suitable method either to retain or to lose the flavour. If a mild flavour is desired the vegetables can be cut into small pieces and cooked in a small amount of boiling water in a covered pan. If vegetables are in large pieces, large quantity of water can be used in an open pan. The plant acids are dissolved in water and the open lid allows the acids to escape.

Green vegetables turn brown because the plant acids and cholorophyll are disintegrated on cooking. Cooking time must be reduced so as to prevent their contact. Use of pressure cooker, large quantity of boiling water to cook the vegetables and use of an uncovered part are some of the measures that can be used to reduce the colour change.

Retention of Nutrients : Vegetables are rich in mineral salts and vitamins and most of them are water soluble. Some

of them which are not soluble in water are destroyed by heat or by oxidation. If cooking water is thrown away considerable loss of mineral salts, especially of sodium, potassium and chlorine due to leaching occurs. To avoid this either use minimum , amount of water or the excess water after cooking can be used for other preparations. Cut the vegetables as big as possible to reduce the cooking lose bring the cooking water to boiling before inserting vegetables.

Cook just enough. Washing vegetables after cutting enables considerable loss of minerals in the water. About 40 per cent minerals and thiamine are lost if the rice is washed twice or thrice -before cooking. Washing once and utilising the rice water are better methods for retaining nutrients. Absorption method of cooking can be adopted for rice cooking.

Vitamin A or carotene is not affected when food is cooked in water. But shallow frying or roasting brings considerable loss of these vitamins. If sodium bicarbonate is added especially for dals or pulses most of the thiamine is destroyed. Roots like potato, sweet potato and other roots which can be cooked with their skin must be cooked so as to prevent leaching out of nutrients.

They can be boiled first and later cut into pieces. Vitamin C is the most unstable vitamin among water soluble vitamins. Washing, cutting with an iron knife, cutting into smaller pieces and prolonged cooking lead to oxidation of vitamin C content of food items. If tamarind or lime, which is high in acidity, is added to cooking water it has a preservative effect on this vitamin. Since vitamin C is leached the least possible amount of water must be used and the cooking done in a covered vessel.

Cooking just before consumption is another method to preserve vitamin C content in the foods. Use of pressure cooker minimises the loss of nutrients. Consumption of raw vegetables

provides all nutrients without any loss. If boiling is the method used to cook vegetables put them only into boiling water and bring the cooking water again to boiling temperature. For strong flavoured vegetables use little boiling water and let them remain uncovered. For other vegetables smaller amounts of water and tightly covered untensils are recommended. Avoid the use of baking soda.

The Losses of Vitamins in Some Vegetables during Cooking

Name of vegetable	***Method of cooking***	***Loss of***		***Vitmin C***
		Tiamine	***Riboflavin***	
Beans	Boiling	29%	20%	42%
Cabbage	"	32%	18%	45%
Carrots	"	20%	10%	30%
Potato	"	25%	9%	23%
Peas	"	28%	17%	40%
Spinach	"	15%	10%	28%
Sweet potato	"	20%	13%	24%
Beans	Steaming	22%	14%	32%
Cabbage	"	18%	9%	38%
Carrots	"	15%	10%	25%
Peas	"	24%	11%	30%
Potato	"	20%	12%	25%
Spinach	"	16%	12%	25%

PULSES AND CEREALS

Dried edible seeds of certain plants are called pulses. Split pulses are known as dals. Pulses are good sources of proteins and B vitamins. Even though vitamin C is not present in pulses, sprouting of pulses makes it a very good source of vitamin C. Pulses are the best supplements for cereals. Generally pulses contain about 20 to 28 per cent of protein but they are inferior in quality compared to animal foods.

Methionine, the limiting amino acid in cereal proteins, is present in good amount in pulses. Thus cereal pulse combination improves the nutritional quality of the diet. This combination is the most economic way to provide protein.

Pulses contain fair amounts of minerals like calcium and iron. About 8 to 10 mg of iron and about 100-200 mg of calcium are present in 100 gms of pulses. Pulses contain fair amounts of thiamine, riboflavin and niacin. Sprouting of pulses improves the carotene content and vitamin C.

PULSES: IMPORTANCE

Green gram, red gram, bengal gram, black gram, cow gram, horse gram, lentils, peas and soyabeans are the common pulses used in our cookery. All these pulses are good in protein, carbohydrate and vitamin B and fair in mineral content. But vitamin C is not present in them. On sprouting this deficiency can be rectified. To sprout, cleaned pulse is soaked for 24 hours and then it is spread on a muslin cloth, sprinkling water occasionally on it.

After 24 hours tiny sprouts appear on the surface. These sprouts are very rich in vitamin C and carotene. Sprouted Pulses are very tender and cooking is not necessary. They can be used as raw salad by sprinkling lime juice and salt or as raitas by adding curd and salt to it. As cooking destroys vitamin C it is better to use them as a raw item.

Vitamin 'C' Content of Sprouted Legumes

Period of Germination	***Vitamin C***
Dry legumes	Trace
After 24 hrs germination	7-12 mgms/100 gm
After 48 hrs germination	11-18 mgm/l00 gm
After 72 hrs germination	13-20 mgm

If pulses are not cooked properly they contain much undigestible materials. But if pulses are used as flours they are completely digested and absorbed. In raw pulses trypsin inhibiter is present and it is anti-digestive in nature. Among the various pulses green gram is digested best. If more than 100 gms of pulse is consumed in a day it is not properly digested and gas is produced. If diarrhoea or other stomach complaints are present gas is produced by consuming small quantities of pulses. Bengal gram has the efficiency to reduce serum cholesterol level by increasing faecal excretion of total bile acids.

Lathyrism : Lathyrism is a paralytic disease seen in India and Spain where a type of pulse called khesari dal. — Lathyrus sativus — is used liberally in food. In India Khesari is extensively cultivated in Madhya Pradesh, Bihar and Orissa. In Uttar Pradesh, West Bengal, Maharashtra, Gujarat, Karnataka and Andhra Pradesh it is cultivated in limited extent. Kesari dal is very cheap and highly nutritious.

The flour prepared from this dal is used as a staple food in these areas. In these areas most of the agricultural labourers get khesari dal as their wage and about 250-500 gm of it is consumed by a person in a day. As a result about 4 per cent of population in these areas are crippled. Surveys in two districts of % Madhya Pradesh (Rewa and Satna) showed 32,000 paralytic victims with lathyrism. The cause of lathyrism is the production of a toxin known as BOAA-B oxalyl amino L alamine which affects the nervous system. The toxin is produced more by the busk and its consumption causes high incidence of disease. The Indian Council of Medical Research has developed certain methods to destroy the toxin.

The disease occurs in different stages. The onset is sudden. But in the first stage itself it can be detected. On exposure to cold the calf muscles contract and backache occurs. An awkward manner of walking with short jerky steps and crossed gait are common. Muscular stiffness necessitates the use of a stick to

maintain balance. Later spastic paralysis of the lower limbs, and exaggerated knee and ankle jerks occur.

And at this stage the patient needs crutches for support. Finally correct posture becomes impossible as the knee joints cannot support the weight of the body. The patient crawls by throwing his weight on his hands. The serum globulin and urinary glutamic acid are increased in this condition.

The National Institute of Nutrition identified the toxic factor and a simple feasible solution was suggested by them to destroy the toxin. The household procedure is to steep the dehusked grain is boiling water. The seeds are drained of water and sundried and thus the toxin is eliminated. About 90-95 per cent of the toxin is leached out by this method.

Soyabean : Soyabean is otherwise known as the miracle bean because it is a storehouse of proteins, fat, vitamin A, thiamine, riboflavin and nicotinic acid. The protein content in soyabean is about 43 per cent and fat content is 19.5 per cent. The proteins of soyabean consists of all the essential amino acids in proper proportion except methinine and cystine. It has a good amount of lysine and it can be used for supplementing rice which is deficient in lysine. Apart from the nutritive importance it is also made use of in the production of penicillin and other antibiotics for industrial purposes. Enamel paints, varnishes and printing inks are made out of soyabean.

Even though it is rich in nutrients, unless it is processed properly, proteins and carbohydrates of soyabeans are poorly digested. Soyabean contains a factor which inhibits the protein digesting enzyme, trypsin. Heat destroys it and after cooking if it is used the protein is properly digested. Soaking, steaming, germinating and fermenting are other processes which improve the nutritive value. Soyamilk is very wantious, but soyabean seems to produce goitre at times because it interferes with iodine metabolism. Soyamilk has about 4.2 gm of 3.4 gm of fat

and 0.75 gm of salts. Soyabean can be parched and used like parched bengal gram. It can be used as a substitute for Dal gram flour in recipes.

The Cooking : Soaking, use of sodium bicarbonate, acids, alkali or calcium salts quantity of cooked pulses. Dals absorb water before they can be cooked. If dal is soaked in cold water overnight or in warm water 1 4 to 5 hours it can be cooked within 30 to 40 minutes. But if hard water is used for cooking it takes more time :

(a) If sodium bicarbonate is added to cook pulses cooking time is reduced.

(b) vitamin like thiamine destroyed.

Addition of acid helps the cooking of pulses whereas as retard the cooking. Addition of formic acid of the pulse also influences the cooking quality. The exact causes for these variations are not found out.

Cereals, a Necessity

Cereals and millets form the staple food of human race. Wheat, rice, maize (corn), barley, oats, jowar, ragi and bajra are the common cereals and millets used. Cereals as a whole are rich sources of starch or carbohydrate, and good sources of protein in an Indian diet. Millets like ragi are a rich source of mineral calcium. Cereals are also good sources of B group vitamins.

Wheat : Wheat is one of our important food crops. Next to rice wheat is the most extensively grown foodgrain.

Wheat varies in its nutritive value, especially its protein content depending upon the seeds, variety in soil and water supply. The protein content varies from 7 to 20 per cent. In the 'green revolution' new varieties of superior quality wheat were produced. Sonalika, safed lerma, kalyan sona, sharbati sonora are some of these new varieties of wheat.

The wheat grain consists of three main parts. The germ or embryo is rich in protein and oil, the endosperm is rich in starch and fair sources of proteins and the outer coverings such as pericarp.

Various wheat products available are broken wheat, semolina, wholewheat flour (atta) and white flour. These flours are made from different kinds of wheat. Hard wheat, durum wheat and soft wheat are the different types of wheat from which flours are made. Flours of different percentages of extraction are obtained.

Depending on the extent of milling, flour made from hard wheat has an extraction of 83 per cent and it is used for chapati making. With 75 per cent extraction white flour or soft wheat products are obtained. Biscuits, cakes, crackers and breakfast items are prepared from this flour. Semolina is prepared from hard wheat and durum wheat. It is granular wheat and it is used for the manufacture of macaroni products like noodles.

Composition of Wheat Flour : Wheat is a very good source of carbohydrates and proteins; l00 gms. of wheat provides 350 calories. Wheat contains carbohydrate in the form of starch; 66 to 68 per cent of flour is carbohydrate. Wheat flour has cellulose and hemicellulose and its quantity enhances the quality of dough prepared from it

Protein : Wheat flour contains glutenin and glidin as proteins which are commonly known as gluten. Wheat flour contains about 12 to 12.5 gms of protein per 100 gm. The strength of wheat flour is based on die quality of gluten in it Gluten is comparatively poor in amino acid lysine. Pulses, soya bean and groundnut are good in lysine content and they can be supplemented with wheat.

Lipids : Wheat flour contains 1.88 per cent fat; its kernel has about 3 per cent and bran contains about 4.8 per cent fat. Fat is present in the gluten of the flour.

Minerals : Wheat flour is poor in calcium content. The iron content of whole wheat flour is high but refined flour has less iron. Phosphorus content in whole flour is high compared to refined flour. But this high phosphorus content interferes with the absorption of calcium and iron.

Vitamins : Wheat is comparatively a good source of thiamine, riboflavin and nicotinic acid. But cooking results in loss of these B complex vitamins. During chapati making about 33 per cent of thiamine is destroyed and during fermentation much more thiamine is lost. In the preparation of puri 40 to 90 per cent of thiamine is lost. During bread making about 10 to 30 per cent lysine is destroyed. If the bread is toasted again this vitamin is lost Bulgar wheat is much more nutritious. Wheat is parboiled in the preparation of bulgar wheat. During this process vitamins and other nutrients in the outer layers of the seeds move to the centre. Thus bulgar wheat is better in its auditive value.

Processed Wheat Products : Bread, biscuits, toast and breakfast cereals like wheat flakes and shredded wheat are processed wheat products. The autrivtive value of bread, especially fresh bread, is similar to two-thirds of wheat flour in its quantity. In the preparation of biscuits thiamine and protein is lost. On baking, apart of thiamine is lost and lysine is also lost. The average protein content in biscuit is 5 to 8 per cent as against 12 per cent in wheat flour. In the preparation of toast heat is applied on bread slices and part of thiamine is again destroyed. Lysine is also lost considerably. Readymade breakfast items are also inferior in nutritive value.

Rice : Rice is the staple food not only in India but also in many of the South-East Asian countries like Ceylon, Burma, China and Japan. Rice with its husk is called paddy. Husk is the loose covering of rice. It has no nutritive value. About 20 per cent by weight of paddy is busk. Removing the husk is called milling. Bran, aleurone layer, embryo or the germ and endosperm are the other layers. Bran is die outermost layer which contains

nutrients and cellulose. Aleurone layer which lies beneath the bran is rich in vitamins, minerals, proteins and fats. Embryo or the germ is at the base of the grain which is rich in all nutrients and vitamin E. Endosperm forms 75 per cent of the grain and it comprises mainly starch. On milling vitamin B lost considerably. Parboiling improves the vitamin content of rice.

Parboiling of Paddy : In the conventional method of parboiling paddy is steeped in cold water for two to three days. Then it is steamed for about 5 to 10 minutes and men dried under the sun. During soaking paddy is fermented and at times gives out a foul smell. B complex vitamins in the pericarp and germ penetrate into the endosperm and get fixed into the grain. If parboiling is not done with care certain moulds present in the grain grow and produce toxins like aflatoxin. This can be rectified by using modern techniques in food processing. Through hot soaking process developed by CFTRI (Central Food Technological Research Institute) in Mysore is can be rectified. In this method paddy is soaked in water at 65^o to 70^oC for about 3 to 4 hours. Then water is drained and the soaked paddy is steamed in the same vessel for 5 to 10 minutes. This paddy is dried in sun or in mechanical driers.

The nutritive value, especially of thiamine and niacin, is improved by parboiling.

Nutritive Value of Rice : Rice contains carbohydrate in the form of starch. Though it is a source of protein, it is a poor source of fat, iron and calcium, provides about 335 calories per 100 gm of dry weight. The protein content is about 7 per cent which is not an appreciable amount since it is consumed in large quantities, rice supplies a good amount to proteins. In poor Indian diets cereals or millets are the main source of proteins. Though the protein content is low in rice compared to wheat the quality of rice proteins is superior to wheat proteins. Rice protein deficient in lysine which can be improved by supplementing the with pulses. High yielding varieties of rice are

cultivated in our country. The protein count of hybrid variety rice like IR-20 is 9 per cent against 7 per cent of ordinary rice.

Rice is poor in its mineral content especially calcium. Iron content is also negligible, therefore rice-eaters must depend on other sources of minerals. Green leafy vegetables can be used for miner supplementation.

Rice is a poor source of carotene or vitamin A, and vitamin B present in good amount. Since it is present mainly in the outer lay polishing reduces the vitamin content. As polishing is increased content of B vitamins decreases. In 20 per cent polishing thiamine (B. content is only 40 mg/gms whereas in parboiled rice at 20 per a polishing thiamine is 200 mg/100 gm. Niacin content is 0.6 mg/100 gm, in 20 per cent polished rice whereas in parboiled rice it is 2.8 mg/l gm. Among people who depend entirely on polished rice, a burn sensation in the feet, tingling and numbness occur. This is due to deficiency of thiamine in the diet.

Even though rice is a good source of B complex vitamins. Its high solubility in water makes it non-available after various processes of cooking. About 60 per cent of it is lost through washing, if rice is washed twice or thrice. In the cooking water, remaining B complex gets dissolved. If the “conjee” water is thrown i this amount is also lost. Cooking rice in just enough water and utilise the excess water, if any, are the useful tips to make use of this vitamin.

Gelatinisation : Starch is present in cereals. This is insoluble in water, but in hot water it dissolves and forms colloidal dispersions. It swells and forms a sticky substance. In cereals about 65 to 80 per cent starch is present. Next to cereals roots like tapioca, potato and sweet potato are with starch granules. These roots and tubers contain about 22 to 39 per cent of starch. In starch there are two components—amylose and amylopectin. Amylose is about 15 to 30 per cent and amylopectin about 70 to 85 per cent.

In different sources of starch it is present in different proportions. Amylose is soluble in water and amylopectin is insoluble in water. On 5 per cent concentration starch forms gels. Among the various sources of starch corn starch is the finest. This property of starch to gel is exploited in cookery. In many preparations starch is used as a thickening agent. To get a good gel, gelatinisation temperature of different starches must be known.

Usually it starts to gel at 65^o to 72°C. The enzymes in the starch are the other factors which affect the gelatinisation. Commercial products like sago, custard powder, corn syrup, glucose or dextrose and dextrimaltose are prepared from tapicao starch or from corn starch.

Millets : The common millets used in our country are jowar, ragi and bajra. Though millets are comparatively cheap they are superior in nutritive value. Usually people prefer rice or wheat as their cereals. If these millets are used more many deficiency symptoms among various groups can be minimised as they are excellent sources of vitamins and minerals.

Ragi : In India ragi is used mainly in Karnataka and Tamil Nadu as a staple food. In Kerala, ragi is used as a weaning food. Actually ragi is considered as a 'poor man's milk' by nutritionists because of its high calcium content. It can be easily substituted as a breakfast item. If we consider its cost it is cheap and at the same time rich in minerals that are lacking in rice or wheat. Like wheat or rice, ragi also contains 7 to 10 per cent protein and is equivalent to the above cereals in its carbohydrate content. It is considered superior because of high calcium content.

Ragi is also a good source of iodine. No other cereal contains iodine. Another special feature of ragi is that the carbohydrate in ragi is digested slowly and so it can be given to diabetic patients because the sudden rise of blood sugar can be avoided by this. In certain hybrid varieties of ragi protein and iron contents

are more and thus it is superior in its qualities. Ragi can be incorporated with pulse instead of rice in all breakfast items.

Bajra : Bajra is used in certain parts of the country as a staple food. It consists about 12 per cent of protein and calcium and iron content is compared to rice. Bajra is a better source of vitamin B, especially thiamine and riboflavin.

Jowar : Jowar is used in Maharashtra, Andhra Pradesh, Karnataka, Tamil Nadu and Madhya Pradesh. The protein content in jowar is 10 per cent and the amino acid proportion is better. It has more B complex vitamins compared to rice. But certain varieties of jowar inhibit the availability; of niacin and cause the deficiency symptoms of pellagra.

Effect of Varying Concentration of Sugar Syrup and Crystallisation

Boiling temperature° C	***Sugar percentage (Syrup)***	***Cold water test***
110-112° C	78-80	Does not form a ball
113-115° C	83	Soft ball, eg., fondant
118-120° C	86	Firmer ball, eg., caramels.
128-130° C	90	Hard ball, but still plastic, eg., candy
138-140° C	94	Very hard ball, eg, toffees
149-154° C	98	Very hard and brittle, eg., brittles.

To prepare the syrup add a small amount of sugar in water and heat, when the whole sugar is dissolved examine the consistency.

OTHER FOODSTUFFS

Spices in Use : Spices and condiments are accessory foodstuffs mainly used for flavouring food. Some condiments are good to fair sources of carotene. Red chillies and coriander are examples of this. Green chillies are rich in vitamin C. Turmeric

and tamarind are fair sources of iron. Garlic promotes intestinal synthesis of certain vitamins. Among the spices and condiments fenugreek seeds have the highest amount of protein, that is, 26.2 per cent.

Cuminseeds, dry chillies and coriander seeds have a protein content of 18.7,15.9 and 14.1 per cent, respectively. Caraway has a protein content of 17.1 and fat content of 21.8 per cent in it. Coriander, cuminseeds and dry pepper have a fat content of 16.1,15.0 and 6.8 per cent, respectively. Cuminseed is also rich in calcium. About 1.080 gm of calcium is present in 100 gms. Asafoetida and coriander are also good sources of calcium. Asafoetida, cuminseeds, cloves, fenugreek seeds, turmeric, tamarind and omum are good sources of iron. Cardamon, green chillies, coriander, cuminseeds, caraway and green pepper are rich sources of carotene.

Dry chillies, nutmeg, cuminseeds, coriander and fenugreek seeds are goqd sources of thiamioe. Even though these condiments and spices are rich in vitamins and minerals they are used only in minute quantities. Black pepper, coriander, cumin, ferugreek, mustard seeds, chillies, nutmeg, cloves, cinnamon and cardamom are used as spices in our country.

The popularity of spices is due to their stimulating effect on appetite next to its flavour. Certain spices and condiments have medicinal effect. Turmeric is believed to be anti-inflammatory. In anti-allergic drugs turmeric is used. Turmeric also reduces blood cholesterol level. Consumption of spices and condiments in large quantities produces irritation in the mucous membranes of the alimentary canal. Peptic ulcer is common among people who use condiments and spices liberally.

Herbs like curry leaves, coriander leaves, mint leaves and leaves of citrus fruits are used for preparing chutney powders and they are also used in many curries.

Gelatin Dishes : When the protein in connective tissues

and bones—the collagen—is heated with water gelatin is obtained. To bring this change in collagen it has to be heated to 95°C. Some peptide bonds of collagen are hydrolysed to gel.

Commercially it is available in granulated, flake or sheet forms. It easily dissolves in hot water and on cooling it sets to a gel. Concentration of gelatin, cooling temperature, the presence of minerals like calcium and concentration of sugar affects the quality of the product. With a 2 to 3 per cent of gel concentration and at temperatures below 15°C a good gel is formed. Sugar in 6 to 10 per cent concentration enhances the speed of gel formation. If the gel is heated it melts and on cooling it sets again. Now vegetable gels are also available in the market.

Gelatin is used for decorating various types of desserts. For ice, souffles, baked ice-cream, or other creams, jelly trifles, caramel puddings, flans, milk puddings, sponge puddings, with stewed fruits, milk jellies, purees of fruits, junkets and with baked fruits gelatin can be used to make them more attractive. Gelatin acts as a stabiliser and reduces crystal formation of ice-creams.

Emulsifying and Stabilising Agents : Substances which, when added to food, gives a uniform dispersion of oils and fats in aqueous media are called emulsifiers or stabilising agents.

In food industry it is often liberally used and they are harmful. Agar, edible-gums, brominated vegetable oils, gelatin, albumin, lecithin, starches, hydrolysed proteins and stearyl lastaric are some of the examples.

Role of Sweetening Agents

Sugar, sugarcane juice, jaggery, molasses, honey, saccharin and cyclamates are the common agents used as sweetening.

Sugar (Sucrose) : Sugar is almost pure sucrose made up of glucose (dextrose) and fructose (laevulose). One gramme of sugar supplies 4 kcals and a teaspoonful (5 gms) provides 20 kcals. Brown sugar and white sugar are similar in nutritive value.

Sweets made from sugar produce a sense of satiety and so they must be taken after a meal. If sweets are consumed at the beginning of a meal they reduce appetite. Sugar syrup is used as a preservative for fruits, jams and preserves.

Excessive consumption of sugar and sweets affects the teeth adversely.

Sugarcane Juice : The juice obtained by crushing sugarcane is a refreshing drink. Addition of sugar and lemon juice improves its taste and flavour. Sugarcane is good for hepatitis patients. Jaggery is produced by heating sugarcane juice. It has been reputed to be good for the heart. Molasses is a byproduct in the manufacture of sugar. Fermentation of molasses produce alcohol.

Honey : Honey is a golden-coloured syrup made by bees from the nectar of flowers. It is a mixture of glucose and fructose. The quality of honey depends on the flower blossom. Honey is a soothing drink for patients with pharyngitis and tracheitis. Honey contains 17.7 per cent water; 36.5 per cent dextrose, 403 per cent laevulose and 1.9 per cent sucrose.

Gur or Jaggery is obtained from sugarcane juice after processing. Palmyra palm, dale palm, or coconut palm is also used for it.

Saccharine and Cyclamates : Saccharine and cyclamates are used as sweetening agents for calorie-conscious people. Saccharine was discovered in 1879. It is 350 times sweeter than sugar and has a bitter taste in concentrated form.

Cyclamate was discovered in 1937. It is 30 times sweeter than sucrose. Cyclamates are harmful to the body if consumed in large quantities. Malignant bladder tumours were produced in experimental animals. Excessive use of soft drinks with cyclamates produce renal tubular acidosis.

Leavening Agents : Leavening agents are substances which produce carbon dioxide in the product. This carbon dioxide

contributes a porous appearance to the product as in bread, cake or in biscuits. Baker's yeast and baking powders are usually used as leavening agents. Baker's yeast when added to the dough, ferments sugar and produces carbon dioxide and alcohol.

This gives the characteristic structure to the product. Baking powders are leavening agents produced by mixing an acid-reacting material and sodium bicarbonate with or without starch. There are three types of baking powders—fast acting, slow acting and double acting based on their speed of action.

Flavour Components in Foods : Food industry is a fast growing field. Much progress has been made in understanding the chemical nature of flavours in foods. Many artificial flavouring materials are now available in the market. The compounds which give the flavour characteristic in one food is given below:

Food		***Main flavour compound***
Banana	—	Isopentyl acetate
Lemon	—	Citral
Grape-Concord	—	Methyl anthranitrate
Potato	—	2-Isopropyo-3 methosy pyrazne
Beetroot	—	Geosmin
Apple	—	Ethyl -2- methyl butyrate

8

BAR SERVICES

A cellar is a place primarily for the storage of alcoholic beverage. The cellar stock is expensive and is treated as valuable. So, at all times a cellar is efficiently administered and adequately supervised. All movements of receiving and supplies are promptly and accurately accounted for. An effective cellar management ensures proper storage so that there is avoidable, less or no damage to the beverage stored and a timely supply to the various bars of the hotel.

To achieve this one needs to consider a good location for the cellar. Control on the purchase, storage, movement of stock and a trained person to look after the stock, are essential. He should be a man of integrity and have an expert knowledge of the trade. He should know about the keeping qualities of different beverage; the behaviour of wineshippers and suppliers and should be able to advise regarding the purchase of beverage.

His Duties Include :

1. Regulating and controlling the supply.
2. Knowing all the specifications.
3. Issue of stock.

4. Proper storage.
5. Submission of statements.

Some Tips on Good Cellar Management :

1. Stock requirements should be related to sales volume.
2. Keeping in touch with the changes in customers preferences. New brands should be given due consideration.
3. Determining realistic stock levels. Standard/par stock of each bin should be fixed. These levels can be adjusted up or down by management which is necessary owing to change in customers preferences, or seasonal changes.
4. The discount should be considered carefully.
5. The items should be divided into slow selling and fast selling. Items should be stored considering their demand.
6. Bins should be constructed to hold a fixed stock. Items should be stored in such in a way so that stock can be determined quickly at any time.
7. Each bin should have a bin cards. Full bin card should be safely stored and new ones should be issued against the used ones. In addition to bin cards a stock register should be maintained.
8. Items should be issued only against requisition.
9. A register should be maintained for the issue of stock against the broken or corky bottles. The issues should be against proper authorisation.
10. A register should be kept for the outward empties.
11. The Cellar should have fixed working hours. In the absence of the cellarman the keys should be issued against proper document.
12. There should be duplicate keys for the cellar (one key

with the security). After closing the department, the keys should be properly deposited.

13. For the preparation of the Cocktail house brands should be used.
14. From time to time the stock should be supervised for shortage, breakage.
15. There should regular and routine stock-taking.
16. Only the Cellar staff should be allowed access to it. All others should gain entrance to cellar by permission only.

Cellar Location and Temperature Control:

The ideal storage place for wine, spirits and beer is an underground cellar. It is kept well away from the vibrations caused by heavy traffic. The temperature is a very important consideration for cellar. Keeping this in mind an ideal cellar should have three separate units :

(i) The major unit maintained at a temperature of 50°-60°F for table wines, fortified wines and spir its.

(ii) A smaller unit maintained at a temperature of 40° F; for sparkling wines. This chamber will also serve the purpose of pre-chilling of wines prior to serving.

(iii) A storage room for beer and minerals water is maintained at a temperature of 45° F.

Temperature in these units should be maintained rigidly, and therefore, they should be far away from boilers, furnaces and hot water pipes to avoid temperature fluctuations. Both extremes (too high and too low) and sudden changes of temperature should be avoided. Cellars should be kept clean; odourless and quite free from germs. The premises should be well-ventilated yet free from dampness. Concrete flooring is the best. Good ventilation helps to keep down the formation of moulds on cask

tops and walls. Cellars are kept well-darked but not very dark. Low voltage lamps should be used. Bright light is not good for some wines and cause certain white wines to cloud.

Bins : Wines are stored in bins. Each bin is numbered. In the cellar, the wines are known by respective bin numbers. The bins are made of brick or wrought iron. Wines are stocked with great care and then left undisturbed until they are required for service.

A Spillage and Breakage Book is kept to record all write-offs. Genuine spillages are credited or replaced by the supplier. Breakage and stock shortages are only written off under the authority of management. A book is kept, showing all debits and credits and stock on hand. A very careful watch should be kept upon the movement of empties and spillage.

Spillage Report

Date	Name of the supplier	Item details	Action taken
4th Feb.	Sminth Bros	Faulty cork in bottle of sherry (Bin 2) Recd. 30th January	Bottle returned on 31st Jan. Exchanged bottles recd. on 1st February
			Reported by

Record of Returnable Empties

Date	Received	Name of the Company	Returned
			Signature

Stock-Taking : Every week the inventory of cellar is taken. One person checks the count of items on the shelves while the other verifies this figure, against the Bin Card and then the record is traced back by reference to the related invoices and/or requisitions. If the difference cannot be accounted for, the card balance figure must be corrected to show the actual count of items on hand. If the difference is numerous or large, more intensive investigation is required to determine the cause of leakage. At the end of the month the cellar stock inventory should be done under the supervision of the control department. The procedure to follow is the same as mentioned above. After the physical verification of stock beverage inventory, the turnover ratio is calculated and the management is apprised of the same.

Beverage inventory turnover is generally from half to one time a month. It is calculated as :

$$\text{Beverage Inventory Turnover} = \frac{\text{Beverage cost for the month}}{\text{Average Beverage Inventory}}$$

Average Beverage Inventory = ... + Closing stock

...sheet for week ending

Opening Stock	Purchase	Total	Issues	Total Stock Issues Bar 1 Bar 2 Bar 3	Balance Stock
					Signature

Cellar Equipment

1. Scantling
2. Spare casks
3. Pails and bowls
4. Areo Meter
5. Corking machine
6. Capachino machine
7. Sykes hydro-meter

8. Tasting glasses
9. Bins
10. Valinche
11. Slogger
12. Thermometer
13. Crates for Beer bottles
14. Washing machine
15. Wheelbarrow

Role of Bar

An efficient system of control must operate between the wine waiters and the dispense barman in order that the correct drinks are served at the right table and that they are charged on the right bill and that a record is kept of all drinks issued from the dispense bar. At the same time a system of control allows the management to assess the sales of each bar over a financial period and see whether it is making a profit or loss.

The usual system of control is a duplicate check pad. The colour of the check pad may be pink or white and is generally for differentiating quickly between food (white) and drink (pink) checks. When the wine order is taken it is written in duplicate. The wine waiter fills in the four items of information required in the check. These are as follows :

1. Table Number or Room Number
2. Number of Covers
3. Date
4. Items (Ordered drinks)

Abbreviations are allowed when writing the order as long as they are understood by the dispense barman and cashier. It should be remembered that when wines are being ordered only the bin number is written down together with the number of bottles required. The bin number is an aid to the dispense

barman and cellarman in finding, without delay, the wine required by a guest. Each wine in the wine list also has a bin number printed against it. All drinks ordered also have the price printed against them, and then at the base of the check the total amount of cash owing for the order given is written and circled. This is an aid to the cashier who checks all prices before entering them on the bill.

On taking the order the wine water hands the top copy to the dispense barman and the duplicate to the cashier. Alternatively the wine waiter hands both copies to the dispense barman, who retains the top copy, puts up the order and leaves the duplicate copy with the order. This enables the wine waiter to see which is his order when he comes to collect his drinks, and after serving them he hands the duplicate copy of his order to the Cashier.

Wine Check (Pink)

Name of Establishment

Table No.	ITEMS		Covers AMOUNT Rs. P.
		TOTAL	
		SALES TAX SERVICE CHARGE	
		GRAND TOTAL	
Date			Signature

When any alcoholic or non alcoholic drink needs to be purchased for an establishment, to keep up the level of stock, it is done by the cellarman. The cellarman's, order is written in

duplicate on an official form. The top copy is sent to the supplier and the duplicate remains in the order book for control purposes. In some instances there may be three copies of the order sheet. If so, they are distributed as follows :

1. Top copy : Supplier
2. Duplicate : Control and Accounts dept.
3. Third copy remains in the order book.

When the goods are delivered to an establishment they are accompanied by either a delivery note or an invoice. Whichever document it may be, the information contained in them is exactly the same, with one exception-invoices show the price of all goods delivered whereas delivery notes do not. The goods delivered are first of all counted and checked against the delivery note to ensure that all the goods listed have been delivered.

An extra check may be carried out by the cellarman by checking the delivery note against the copy of the order remaining in the order book. This is to make sure that the items ordered have been sent and in the correct quantities and that any extra item has not been sent which were not listed on the order sheet, thereby incurring extra cost without immediately realising it. At this stage all information concerning the goods delivered is entered in the Goods Inward Books for control purposes.

No drinks are issued by the cellarman unless he receives an official requisition form, correctly filled in, dated and signed by a responsible person from the department concerned. The cellarman has a list of such signatures and does not issue anything unless the requisition sheet is signed by the appropriate person on his list. In order to aid the cellarman, all requisitions are handed to him at a set time each day, when all issues are made.

In certain instances however, depending on the organisation of an establishment, it is necessary to issue twice per day, once

before opening time in the evening also. All requisition sheets are written in duplicate. The top copy going to the cellar for the items required to be issued, and the duplicate remains in the requisition book for the barman to check his drink on receipt from the cellar.

Role of Cellar

In any catering establishment where a large percentage of the income received is through the sale of drink, a system of cellar control must be put into operation. The system put into operation depends entirely on the policy of each establishment. Some or all of the books listed below may be necessary depending upon the requirements of management:

1. Order Book
2. Goods Inward Book
3. Cellar Ledger
4. Bin Cards
5. Goods-returned Book
6. Stock-book
7. Departmental Requisition Book
8. Daily Consumption Sheets.

The cellar is the focal point for the storage of alcoholic beverage in an establishment. All the service points for such liquor, such as the lounge, lounge bar, cocktail bar, saloon bar, bakery, dispense bars and floor service draw their stock on a daily or weekly basis from the cellar, this being determined largely by the amount of storage space available and the turnover of sales.

All the bars within an establishment hold a set stock of liquor which is sufficient for a period of one day or one week. At the end of this period of time the requisition for the amount of drink consumed in that one day or week, thus bringing their total stocks up to the set stock required.

In the cellar where bin cards are used, every time a wine is received or issued it is entered on the appropriate bin card and the remaining total balance shown. Thus the bin cards should show at any given time, the total amount of particular wine held in stock. They also show where applicable a maximum and minimum stock, this being a guide to the cellarman when ordering.

Bin Card

Name of Wine			Bin No.
Date	Received	Issued	Balance

In the dispense bar, a daily consumption sheet is completed each day after the service by copying down the sales shown on the top copy of the wine checks. The consumption sheet lists the complete details of the dispense bar. At the end of the week the consumption sheets may be totalled up, thereby showing the total sales for that period.

These totals are then transferred on to a Bar Stock Book for costing purposes. Where drinks consumed are not checked for in any way then either a daily or weekly stock is taken so that the amount to be requisitioned from the cellar can be moved. This then brings the bar stock back up to its required level.

Daily Consumption Sheet

Name of Drink	Bin No.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun	Total

Stock Book

Name of Drink	Bin. No.	Opening Stock	Received	Total	Issued	Closing Stock	Price per Unit

The following diagram shows the basic steps in Bar and Cellar Control :

Cellarman
↓
Order Form
↓
Wholesale Wine and Spirit Dealer
↓
Cellar
↓
Goods Inwards Book
↓
Cellar Ledger
↓
Bin Card
↓
Issue Against Requisition Sheets
↓
to

↓	↓	↓	↓	↓	↓
Lounge Bar	Cocktail Bar	Saloon	Bakery	Dispense Bar	Floor Service

↓
All bars have their own set stocks which are made up daily or weekly by filling in the requisition sheet
↓
Daily Consumption S heets (Dispense Bar)
↓
Bar Stock Book

Bar Card

Aperlifs	***Per Glass***
	(60 mis.)
1. Cinezano Sweet	“
2. Cinzano Dry	“
3. Noily Prat	
4. Dubonnet	“
5. Campari	“
6. Amer Picon	“
7. Cynar	“
8. Pernod	“
9. Sherry Bristol Cream	“
10. Sherry Bristol Milk	“
11. Sherry Drysack	“
12. Port Harveys Hunting	“
13. Maderia Club	“
14. Malaga	“
Scotch Premium	***Per drink***
	(30 ml.)
1. Haig’s Dimple Scotch	“
2. Johhny Walker Black Label	
3. King of Kings	“
4. Black Dog	“
5. Old Parr	“
6. Chivas Regal	“
7. Royal Salute	“
Scotch Regular	***Per drink***
	(30 ml.)
1. Haig’s Gold label	“

2. Black and White	"
3. King George IV	"
4. Vat 69	"
5. Johnny Walker Red Lable	"
6. White Label	"
7. Ballantines	"
8. White Horse	"
9. Old Smuggler	"
10. Highland Queen	"
Miscellaneous Whiskies (IMPORTED)	***Per drink*** (30 ml.)
1. Irish Whisky Tellamore Dew	"
2. Canadian Whisky Seagrams V.O.	"
3. Canadian Club	"
4. Old Forester Bourbon	"
5. J.W. Harper Bourbon	"
6. Walkers Oe Lexe Bourbon	"
7. Old Grand Dad Kentucky Bourbon	"
8. Old Crown Bourbon	"
Cognac	***Per drink*** (30 ml.)
1. Bisquit Dubouche	"
2. Hennessy	"
3. Martell	"
4. Saligane V.S.O.P.	"
5. Mumm Bouchet V.S.O.P.	"
6. Courvoisier V.S.O.P.	"
7. Remy Martin V.S.O.P.	"
8. Hennessy X.O.	"
9. Remy Martin	"

Lioueures (IMPORTED)	***Per drink***
	(30 ml.)
1. Cointreau	“
2. Benedictine De Fecamp Dom	“
3. Drambuie	“
4. Triple Sec	“
5. Creme De Menthe	“
6. Creme De Cacao	“
7. La Grande Chartreuse Jaune	“
8. La Grand Chareuse Verte	“
9. Cherry Heering	“
10. Grand Marnier	“
11. Kummel	“
12. Kirsch	“
13. Grand Marnier Cordon Rouge	“
14. Cherry Brandy	“
15. Cordial Medoc Jourde	“

Cocktails	***Per drink***
	(30 ml.)
1. Alexander	“
2. Bacardi	“
3. Between The Sheets	“
4. Cherry Blossom	“
5. Daiquiri	“
6. Gibson	“
7. Grasshopper	“
8. Gimlet Vodka	“
9. Gimlet Gin	“
10. Martini Vodka	“

11. Martini Gin	“
12. Old Fashioned	“
13. Paradies	“
14. Pink Lady	“
15. Rob-Roy Dry Or Sweet	“
16. Rolls Royce	“
17. Side Car	“
18. White Lady	“
Long Drinks	***Per drink*** (30 ml.)
1. Bloody Mary	“
2. Collins	“
3. Cubalibre	“
4. Cola with rum	“
5. Gin Sling	“
6. Gin tonic	“
7. Screw Driver	“
8. Singapore Sling	“
Mineral Water (Imported)	***Per bottle***
1. Vichy water	“
2. Evian water	“
3. Perrier water	“
4. Beilly	“
5. Bisleri (Indian)	“
6. Ganga	“
7. Yes	“
Aerated Waters	***Per bottle***
1. Dry Gingerale	“
2. Tonic	“

3. Coca Cola	"
4. Lemonade	"
5. Ginger beer	"
6. Soda	"
Fruit Juice	***Per bottle***
1. Pineapple	"
2. Orange	"
3. Tomato	"
4. Apple Gold Coin	"
5. Apple Kumaon	"
6. Grapefruit	"
7. Mango Juice	"
Squashes	***Per bottle***
1. Orange	"
2. Lemon	"
3. Lime Juice Cordial	"
4. Fresh Lime	"
Per bottle	"
Per bottle	"
Per glass	"
Per glass	"
Cigar Each	
1. Alcazar Corona	"
2. Clarado Corona	"
3. Club No. 4	"
4. Esquisit in tubes	"
5. Hebaneros in tubes	"
Tobacco	***"***
1. Gold Flake	50 gms.

2. Prince Henry	50 gms.
3. Navy cut	50 gms.

Cigarettes

1. India King's	Pack of 20
2. Classic	"
3. Gold flake	"
4. Rothmans (Toth mans)	"
5. Triple Five (555)	"
6. Dunhill	"

ROLE OF STILL ROOM

The main function of a Still Room is to provide items of food and beverage required for the service of the meal and not catered to by the other major departments in a hotel such as the kitchen, larder and pastry.

It has a service room or pantry, contains shelves or cupboards for stacking glassware of a table (or two of more tiers) the dirty plates and silver brought in from the restaurant, a box for dirty table silver brought in from the restaurant, a box for rubbish and sinks with hot and cold water, and draining rack for washing glasses.

A large linen hamper should stand in one corner to receive used napkins and tablecloths.

Staff : In a large first-class establishment a staff room supervisor is in charge of the Still Room. Depending on its size and the duties to be performed, he or she has a number of staff under them for the compilation of work rotas so that all duties are covered and it is fully staffed from first thing in the morning to last thing at the night. A further responsibility of the Still Room supervisor is the ordering of supplies from the main dry goods store and the effective control of these items when issued to various departments.

When ordinary goods are brought from the main store, all requirements are written out on a requisition sheet in duplicate. The top copy goes to the store to be retained by the storekeeper after issuing the goods and the duplicate remains in the requisition book as a means of checking the receipt of goods from the store by a member of the Still Room staff. No goods should be issued by the storekeeper unless the requisition has been signed by someone in authority. The Still Room has to remain open 24 hours a day.

Waiter's Procedure : A waiter leaves the restaurant with the used material, and properly stacks the dirty plates, on the table provided and the dirty silver in the appropriate boxes. The waiter then takes the next set of dishes ordered by the customers and re-enters the restaurant.

Pantry Maintainence : The pantry, including shelves should be cleaned and the articles kept there put in order of the service floor and sinks cleaned.

Equipment : Since the requirement of most Still Rooms are basically the same, it follows that the equipment in all the Still Rooms are of a similar nature. A wide range of food items are offered and therefore to ensure their correct storage, preparation and presentation, a considerable amount of equipment is used, like :

(i) Refrigerator for storage of milk, cream, butter, fruits juices and so on.

(ii) Butter Machine for portion control purpose.

(iii) Coffee Machine generally of the still set type containing facilities for the provision of hot milk, hot water and sometimes a steam injection. Other forms of coffee machines are used to operate in the food service area itself. Depending on the type of establishment and its requirements, the coffee machine varies from normal to automatic coffee machines.

(iv) Large double sink and draining board for washing-up purposes and a washing-up machine of a size suitable for particular Still Rooms and large enough to ensure efficient turnover of equipment.

(v) Tea dispenser for portion control purposes. This is always kept locked and the key held by the head Still Room man or maid.

(vi) Salamander for the preparation of breakfast or melba toast.

(vii) Bread Slicing Machine for portion control purpose.

(viii) Hot Cupboard : For plates, teacup and the Still Room.

(ix) Working tabletop and cutting board.

(x) The necessary storage space for all the small equipment such as China, glassware and silver ware in everyday use.

(xi) *Storage Cupboard :* For all dry goods.

(xii) *Double Gas Ring :* For preparation of porridge and eggs.

(xiii) Coffee Grinding Machine

(xiv) Food Waste Dispenser

Provisions : As a basic guide, the following food items would normally be dispensed from the Still Room.

(i) All kinds of beverages such as coffee, tea, chocolate, Horlicks, Ovaltine.

(ii) Assorted fruit juices like, orange, tomato, pineapple and grapefruit.

(iii) Sugar—leaf, prewrapped portions (sachets), brown sugar.

(iv) Preserves like Cherry, Plum, Rashberry, Strawberry, Apricot and honey for the purpose of control and saving

with regards to wastage. Many establishments now offer pre-portioned jars or pots of preserve at breakfast and for afternoon tea, rather than the preserve dish in which the preserve is unused and will very often be thrown away.

(v) Butter—either passed through a butter pat machine, curled or prewrapped portions. Once prepared it is best kept in bowls of iced water.

(vi) Bread—White, Brown and French.

(vii) Rolls, Bread and Croissants

(viii) Breadsticks and Starch-reduced rolls.

(ix) Dry crackers, digestive and water biscuits for the cheeseboard.

(x) Assorted Breakfast, Cereals—Cornflakes, Wheat flakes, Rice Crispies, Oatmeal. Many establishments now offer these in a prewrapped, portion controlled packet.

(xi) Toasted scones and Tea cakes

(xii) Pastries, Gateaux and Sandwiches.

Silver Room Or Plate Room : Equipment: The silver room should hold the complete stock of silver required for the service of all meals together with a slight, surplus stock in case of emergency.

The storage of silver is most important. The large silver such as flat, silver soup tureens etc. are stored on the shelves, with all the flats of even size stored together and so on. All shelves are labelled showing where each different item goes. This makes it easier for control purpose and stocking.

It should be remembered when stacking silver that the heavier items should go on the shelves, lower down and the smaller and lighter items on the shelves higher up. This in itself will help to prevent accidents. All cutlery and flats are, together will the smallest items of silver such as ashtrays, cruets, butter

dishes, special equipments, table numbers, menu holders are best stored in drawers lined with green baize.

This helps to prevent noise and stops the cutlery sliding about the drawer when it is opened and closed and thus becoming scatched and marked. It is the duty of the kitchen steward to ensure that all silver is cleaned regularly. He should also check if any article is broken or requires buffing or replating.

Silver : Silver is a relatively soft metal which is found naturally in the earth but generally in the form of silver salts, from which the metal is extracted. It is a white metal and is unaffected by water, pure air and the majority of food stuffs. Sterling silver is an alloy containing 92.5% silver and the remainder is mostly copper which is added to harden the silver and yet not change other properties of the metal. Sterling is obviously more expensive than silver plates and is seldom used in hotel and other places.

Silver plateware is made from blanks or bodies of a nickel silver or nickel brass alloy. They are immersed in a complex solution of silver salts and by means of electrolyses, silver is transferred to the blanks and an electroplated product emerges. This process is called “EPNS” meaning Electroplated Nickel Silver.

Silver and Silver Plating : Solid silver can be recognised by its hallmark. This is stamped on to some part of the articles to denote its quality.

Silver plating is a thin layer of silver on top of another metal. It is made by an electrical process, hence the name Electroplated Nickel Silver. The best quality has a guarantee for 20 years.

Provided that the blanks are made from a specified nickel silver alloy of the correct thickness, the quality of the silver plate depends on the electrode deposit, which must adhere well, be free from defects and be of a good thickness.

The varnish of silver is due to action of compounds of silver.

Cleaning Silver

Method 1

1. Silver article is taken.
2. Suitable polish is chosen.
3. One of the following is applied :
   → Liquid polish with a rag.
   → Plate powder mixed with a greasy paste.
   → Water or Methylated Spirit.
   → Impregnated Wool Cloth
4. Left to dry.
5. Polished with a rag, or duster.

The silver is washed and rinsed after cleaning. Care of Silver

→ avoid scratching

→ store it carefully

Method 2 : This is known as the Soda Aluminium method. It is quick way of cleaning silver and is especially suitable for small articles like spoons and forks. Other white metal cannot be cleaned in this manner.

Requirements : A dish cloth, a bowl, soda and a piece of aluminium foil, are required.

1. The bowl, is washed and put in an aluminium foil.
2. A teaspoon full of soda is added.
3. Boiling water is poured and the silver is dipped for 2-3 minutes.
4. The silver is removed from the bowl and cleaned with a dishcloth.

Effervesence shows that a chemical actions is taking place. Water and soda removes the sulphur tarnish from the silver. The aluminium foil can be re-used many times.

Method 3 (Silver Dip)

1. The silver is put into the soda.
2. Removed immediately, as the tarnish has been removed.
3. If left in solution too long the silver itself will be damaged.
4. Washed, rinsed and dried.

Method 4—the Use of the Burnishing Machine : This is a revolving drum with a safety shield. It may be plugged into the mains. It has a portable container in which water is filled with the help of a box pipe. Depending on the size of the burnishing machine in use, it is divided into compartments to hold specific sizes of silver. It is also be possible to insert a rod through the centre of the drum from one end to the other. This rod is removable and is passed through the handles of teapots, coffee pots, milk jugs, sugar basin etc. to hold them in position while the drum is revolving.

In order for the burnishing machine to run effectively it should approximately be filled with lead shots. To these a certain amount of soap solution is then added according to the manufacture's intructions. The silver is placed inside and then the lid is clamped down tightly. The main water supply is turned on to ensure a constant flow of water.

Then water is poured into the drum until the lead balls are covered before the lid is clamped down. The machine is then switched on. This mixture of water and soap acts as a lubricant between the silver and balls. Thus all types of tarnish are removed but the silver should be rinsed in hot water and wiped with a clean cloth. The lead shots must always be kept covered with water otherwise they rust very easily.

Washing Up : Washing up is most important and the service area must be settled correctly so that the brigade can work speedily and efficiently when passing from the food service areas to the kitchen. The waiter should stock trays for duties correctly at the sideboard with all the correct size plates together and tableware stacked with the blades of the knives running under the arches of forks. All glassware should be stacked on separate trays and taken to a separate washup point.

For a hygenic wash up the generally recognised requirements are a good supply of hot water at a temperature of 60°C for general cleaning followed by sterilizing, and then rinsing at a temperature of 82°C for at least one minute.

The object of cleaning utensils is to remove any material from them on which micro-organisms can develop, and to destroy any micro-organism which are already present *i.e.* to sterilize or disinfect.

These objects can be achieved either by (i) Hand Dishwashing (ii) Mechanical Dishwashing

Hand Dishwashing : Dishwashing by hand can be done by the two sink method or by the three sink method. Both these systems start with the removal of leftover food, followed by a preliminary wash under running hot water which helps to preserve the cleanliness. The dirt is removed from the utensils by scraping and then rinsing under the forced water stream.

Three Sink Method for Hand Dishwashing : After the dishes have been sorted out and the dirt has been removed, the utensils are washed in hot detergent solution in the first compartment, then in compartment second at the temperature of water is 110°F and 120°F. After the dishes are thoroughly clean they are sterilized in a third compartment. One method for sterilizing both dish and cooking utensils is by immersing them for at least 2 minutes in a lukewarm chlorine water. Dishes and utensils must be thoroughly cleaned in a chlorine rinse for

an effective germicidal treatment. The desired temperature of water may be maintained by a thermostat-controlled heater arrangement.

Two Sink Method : The simplest and the most effective way of having germ-free cutlery and utensils is with the two-sink method. Washing of utensils is done in the first sink which contains hot water (110°F-115°) and suitable detergents. After removing and draining from the sink, the utensils are transferred to sink number two for rinsing and sterilizing.

Dishwashing Machine : This method saves a lot of time and labour ensuring that a good supply of cleaned sterilized crockery is available.

There are 3 main types :

Spray Types : The dishes are placed in racks which slide into the machines where they are subjected to a spray of hot detergents and water at 48°C-60°C from above and below:

> The rack then moves on to the next section where they are rinsed by a fresh hot water shower of 80°C. At this temperature they are sterilized and on passing out into the open they dry off quickly.

Brush Type Machine : Revolving brushes are used for the scrubbing of each article in hot detergent water. The articles used are then rinsed and sterilized in another compartment.

Agitator Water Machine : Basket of dishes are immersed by the mechanical agitation of hot detergent water. The loaded basket is then given a sterilizing rinse in another compartment.

Dishwashing machines are expensive and it is essential that the manufacturer's instructions with regards to its use and maintenance are followed while operating them.

Food Waste Dispenser : Food waste dispenser are operated by electricity and take all kinds of rubbish including bones, fats,

scraps and vegetable refuse. Almost every type of rubbish with the exception of rags and tins are finely ground and then rinsed down the drain. It is the most modern and hygienic method of waste disposal. Care should be taken by handlers not to push waste into machine with metal objects as this can cause damage.

Food Service Equipment : The equipment needs of a food service facility are similar in the Hotel Industry. Equipments are expensive items with a high capital cost, so it is essential to obtain equipments in the most cost-effective way.

The caterer must stock the level that will ensure a smooth running and efficient operation with the minimum capital investment.

Purchase of Equipment : The following factors should be taken into consideration for the purpose of fitness of both the shape and material used:

1. Cost and Value for money.
2. Durability and expected life.
3. Easy storage or stocking.
4. Hygienic design and easy cleaning.
5. Compatability with the style and image of the unit.
6. Established pattern range for easy replacement or procurement.

Tableware

Crockery : Crockery items such as plates, cups, bowls are either earthenware, china or various ceramics that are midway between earthenware and bone china.

The advantage of earthenware is that it is cheap since its main constituents are :

25% ball clay,

25% clay or kaolin,

35% flint.

However the lower cost means that compared with other material earthenware it easily chips or cracks, liable to strain and is much heavier than bone china. While bone china wears down less and is finer in appearance as it is translucent. The main constituents of bone china are :

25% China clay

25% China stone

50% Calcium phosphate

Thus high quality makers and manufacturers have tried to produce a product that is much less expensive than bone china but has all its good qualities. They market such crockery under a variety of tradenames :

(a) Steelite

(b) Vitrex

(c) Vitrox

Crockery should have the following features :

1. Items should be designed so that they can be utilized for various perposes *e.g.* All purpose bowls in order to reduce cost and storage space required.
2. It should be capable of being handwashed or machine washed-that means it should be able to with stand the temperature of 85°C.
3. It should be chip-resistant, crack resistant and must neither strain or blotch.
4. Plates should have a rolled edge to avoid chipping.
5. Crockery should be light in weight.

Two types of glazing done in the case of crockery.

Underglaze : It is used mainly in earthernware. The pieces are printed or painted after one firing then glazed and fired for a second time. This process ensures that the pattern is absolutely protected and does not wear down.

Onglaze : It is applied to the decoration after glazing. Thin enamel firing is applied for setting the design. It is less-resistant to wear and tear.

In most cases the most widely used decoration is the Transfer which is printed by silk screen or tethograph which can be applied by either method. Transfer makes possible virtually any design.

Glassware : There are two main types of glass, lead crystal and soda lime. Lead crystal is the best and has a good finish. In the catering industry soda lime glass is used more as it can be mass-produced and is hardy and resistant to impact and thermal shock.

Types : The importance of glass in relation to wine cannot be over-emphasized Wine is appreciated by colour, aroma and taste and the shape and type of glass used helps to enhance these characterstics.

Texture : A glass should be sufficiently thin for the lip to help the palate to enjoy the wine’s flavour.

Colour : A wine glass should be good clear glass.

Shape : A glass should be curved at the top so that the aroma is trapped. Handling :

1. A glass is always lifted by its stem or at the base.
2. A glass is never picked up with the rim between thumb and finger.
3. Broken/chipped glasses are removed to the dustbin immediately.

Types of Glassware

Crystal : Crystal is glassware that contains lead and the lead gives it not only a musical tone and a supershine but also adds to their market value. Crystal is seldom tinted.

Hand blown : Refers to the method wherein the glassmakers dip a longware into a pot of molten glass, pick up blob at one end of the pipe and then blow into it until the bowl takes shape. The blown bubble is twisted, turned, rubbed and paddled until it achieves the final perfect curve.

Blown : The glass is similar but machine-made.

Pressed Glassware : The least expensive of this type is made by pouring molten glass into moulds from which it takes its shape.

Cut Glass : Is cut and engraved and polished to reflect as much light as possible.

Cutlery : Used in the catering industry is either EPNS or stainless steel. The major differences in the two materials are of appearance and cost. The quality of EPNS depends upon the thickness of silver plating. Stainless steel has two grades :

18/8 (18% Chromium, 8% Nickel)

12/12 (12% Chromium, 12% Nickel)

It can be purchased with

1. Mat Finish
2. Shiny or Mirror finish. It should be rustproof.

Disposable : This type of tableware can be used for outdoor catering. It is usually made of paper or plastic. It includes :

(a) Napkins

(b) Placemats and coasters

(c) Banqueting Roll

(d) Knives, forks and spoons

(e) Cups, glasses and plates

Perfect Bar Layout

Bar and Counter Display : No two public bars are quite alike, and the keynote of one's decorative scheme depends upon the age and character of one's hotel and sometimes perhaps on one's own personality and interests. The aim is to create the particular atmosphere which customers associate with a public house—they do not want to have the same decorative scheme they are familiar with in their own homes. What one expects is cosyness, friendliness, cleanliness, and comfort, and the feeling that they can join the party by themselves and be equally welcome.

Customers, on the whole, tend to be conservative in their tastes. There is a comforting feeling of continuity with the past in the older type of house; and its mirror-backed shelves are decorative assets. The engraved mirrors reflect one another and the lights and the drinks. They are a stimulant to the eye and to the spirits. If one is lucky one may have cases of stuffed fish or birds, or even some beautiful eighteenth and nineteenth century China wine and spirit barrels, filling the gaps between the mirrors.

Not many public bars can hope to afford such riches, and indeed, they would be out of place in some houses. But much can be achieved by the arrangement of bottles and sparkling glasses on the shelves like displaying bottles in groups with different coloured labels rather than in groups of the same colour. All labels should face outwards, especially those on optics.

Notices, littered at random on the walls, look untidy. They should be put on a large notice-board and that will, enhance the decorative effect of the room. If one puts plenty of information on one's notice-board like air time-tables, sporting fixtures,

cinema programmes, places of interest in the neighbourhood, local events, and so on-it will be really helpful to customers, and the board itself can be made an attractive feature of the room, with a little artistic style.

Area and Size : Area required per person is 15 sq. ft. Bar Counter area is 15 to 20% of the total area of the Bar.

Legal Requirements : The limiting factor in the bar-layout are the legal requirements of state in which one designs to set in the bar. One may on studying the law learn that one cannot operate in a particular state the type of place originally planned. So, it is necessary to secure complete information from the excise authorities or from an architect skilled in bar-layout.

Location : In a hotel the bar should be at an ideal place—as close to the door as possible. It should have an attractive exterior. It should be cheerful and not flashy. Management should decide where it should be located in the hotel.

Working Convenience : One should keep a supply of the most popular drinks nearest to the main serving points. The correct type of glasses where they are most needed. A sufficient quantity of clean drying cloths should always be at hand. Optics should be grouped at intervals in order to avoid the barman having to pass up and down too much at peak periods, and thus being fatigued with a consequent lowering of service standard.

Advertising Value : One should display most prominently the drink that one particularly wish to sell. Put up only the minimum advertising matter that is necessary at the particular time for the trade and avoid a vulgar show of cards. A price lists should be put up in the public rooms.

It is immeasurably easier for the customer to visit the local public house as a regular and pleasant social habit if that house is properly designed for this purpose and subsequently well-maintained.

The Bar Counter : The part of the counter facing the customer should have an attractive finish, since it is the central object in the room. A variety of pleasant materials are available; the choice will depend upon the character of the house or its custom. For the right selection the factors to be considered are :

1. Resistance to dampness, stains and burning marks.
2. Should have attractive design.
3. Easy to clean.

Examples are :

Polished or waxed wood

Plastics

Vitreous panels

A combination of any of the above with art metal.

Anodized aluminium, copper etc.

The treatment and materials used for the bar-top will naturally depend upon the type of bar-front. Several modern plastics, designed specially for the purpose, give excellent wear. Heavy quality monochrome, linoleum finished with an inch and half of wood or plastic-beading to protect the edges, makes for an attractive and long-wearing surface.

Whatever the material, it must always be kept dean.

The height and width of the counters are fairly standard now. A long counter, at a height of about 3 ft. 6 in. to 3 ft. 9 in. from the floor, is desirable for quick service. This height is low enough to allow the resting of the elbow, and high enough to avoid unnecessary breakages. The counter front should be as plain as possible for easy cleaning.

The front panels should slope slightly inwards from top to bottom. If they are so made, there should be a foot rail. Customers still like to have something to put their feet on—it should not

be so far out as to be inconvenient and a foot rail helps to prevent damage to the base of the counter.

Other ways of preventing damage are :

1. A foot plate of hard material on the bottom, 4 inch from the bar.
2. A brick or stone foot rest
3. An inset, 3-4 inches deep.

The Under-counter: This is one's workshop, and should therefore be designed and arranged for the maximum convenience.

Shelving is required for storing bottled drinks in the under-counter and in part of the cabinet. There should bebaskets for empty bottles and containers, crowns, corks, bottle capsules, etc. Empty beer crates, spirit cases, or bottle cartons should never be left lying around in the bars, corridors, or rooms to be seen by the customers.

Beer Pulls and Beer Engines : It is usual to place beer engines in groups, according to the number of different types of draught beer sold. For example, in the house selling one mild Ale, one Sitter and one Burton, the beer engines in a small public bar would probably be one group of four, one for each beer, and a spare.

The spare engine could be used at busy week-ends for mild Ale, the most popular beer, and the order would be arranged so that mild Ale was available on the pulls at each end of the group, leaving Bitter and Burton on the inner two engines. A very long counter in a large public bar, having a similar range of beers, would be fitted with two groups of four.

Wash-ups and draining boards should be near beer pulls, where glasses are normally handed back. The best (and most hygienic) are made of stainless steel.

Cash registers are best situated near the beer pulls, to avoid too much movement for the serving staff. There must be a sufficient number of cash registers to prevent any delay in serving.

Counter Flaps : There should be one or more convenient flaps in the counter, according to its length. Obstruction by ill-placed boxes near the flaps should be avoided.

Lighting: The part that lighting plays in the creation of atmosphere can hardly be over-emphasised. The utmost care should be taken to ensure that lighting does not:

(i) Affect the colour of drinks;

(ii) Play tricks with the make-up of ladies;

(iii) Present a bad uncomfortable light.

Perhaps the majority of licensed house have low ceilings and irregular shapes. These provide a physical basis for the atmosphere which can be developed by the skilful selection and placing of lights. In most cases reflections from the walls and ceilings give a soft, subdued, and perfectly adequate general illumination. Behind the counter, local concentrated lights, in the form of downward-pointing lamps enclosed in opaque shades, gives ample light to work with, without blinding customers or staff. For these purposes incandescent lamps are by far the most suitable; they are smaller than fluorescent strips, and therefore more flexible in use. The quality of their light is both easier on the eye and more flattering to the appearance of the customer and of the bar. Although fluorescent lighting is in the long run more economical in use, it's all pervading luminous glare dissipates the restful cosiness of a room. In certain types of bars, however, it is worthy of careful consideration.

Flowers : If flowers are used they must be fresh and well-arranged. Artificial flowers are not recommended. The flowers should never be placed where they can be knocked over or handled or where the petals and leaves can fall into customer's

glasses. One vase of well-arranged flowers, easily spotted on entering, is more attractive than half a dozen vases placed about the bar. Flowers need not be expensive.

Flowers are not a scheme of decoration in themselves they are only the final touch.

Bar Equipment: Knowing the fact that the bar will be in constant view of the public. These muddlers have a round flattened end for crushing mint leaves, fruit or sugar cubes as part of a drink preparation customer, it needs to be equipped with good quality tools and equipment. Equipment selected should be good in appearance and easy to clean. For this reason preference is given to the stainless steel variety.

List of Equipment (100 Covers)

1. Large mixing glass for stirring clear drinks such as Martini and Manhattan.
2. 12 oz. bar mixing glasses.
3. Cocktail shakes for ordinary cocktails.
4. 20 oz. Metal shakers.
5. A Boston Shake for flips, noggs, which require extensive shaking.
6. A Hawthorne Strainer, its coiled spring edge ensures a snug fit when straining from the mixing glass or Boston shaker.
7. A Cocktail mixie (For bulk preparation).
8. Bitter bottles with sprinkler tops.
9. Muddler sticks.
10. Fruit knives and boards.
11. Ice Crusher.
12. Ice Picks.

13. Ice Scoops.
14. Ice Shaver.
15. Bottle Openers.
16. Ice Tongs.
17. Fine strainers for fruit juice.
18. Small funnels.
19. Corkscrews.
20. Fruit Squeezer. Nutmeg-grater.
21. Glasses-all types.
22. Spoons, forks
23. Sink brush, glass washers with extra washes.
24. Glass-washing machine
25. Sinks.
26. Cruet Sets.
27. Dusters, glass cloths
28. Cocktail sticks
29. Other ingredients like lemons, oranges, cucumber peel, olives, pearl onions, cherries, fresh eggs, creams, crispies, cheese straw, nutmeg, cloves and cinnammon etc.

The Serving Space : It is most important to have the floor of the bar on slightly higher level than that of the room : 1½”-2" is ideal. The raised floor allows the staff the authority of height, and of, course, it assists in supervision.

The width of the serving space depends entirely on the number of staff in the bar and the type of trade. In a small bar with two people serving 3½” from the sub-counter to the back-fitting is ample. In bigger bars with a staff of 6 or more a width of 5 or more is advisable.

The Objectives : To understand the importance of the Bar as an food and beverage outlet, one needs to understand thoroughly the special nature of Bar Operations and their management with an emphasis on the aspect of control.

Objective of Beverage Control : The objective is to determine and report on the actual and potential sales and costs for each food and beverage outlet.

Par Stock or Bottle Control System

(i) Level of par stock to be established for each beverage. To simplify the system, only full bottles are counted, partial bottles are not counted.

(ii) Number of empty bottles are noted each day, this being the amount and type to be requisitioned each day.

(iii) Potential sales are based on the quantities issued at potential sales and are compared to the actual revenue received.

Sales Value System : The sale value of each drink is called the potential sales value system which requires as a basic of operation, established standards for a bottle, drink recipes, drink sizes, glassware and par stock.

Various calculations are made of :

(a) Full Bottle Spirits

(b) Spirits Sold By Glasses

(c) Soft Drink and M/W Sales

  (i) Fixed price when sold on it's own or when sold with another drink *e.g.* Gin and Tonic water.

  (ii) Selling at a lower price when served as a part of a mixed drink.

  (iii) The inclusion of the cost of soft drinks in the price when selling spirits.

Dispensing of Spirits and Wines

Spirits : Glass or metal optics are used to determine the amount to be dispensed for a stipulated price (fixed price). The five out and six out measures are more commonly used.

A reputed quart contains 26$\frac{2}{3}$ oz. fluid and the standard measures are based on an imperial fill *i.e.* 1¼ oz. fluid.

Hence four out measure is 1/4 fill *i.e.* 1/4 oz. fluid,

'Five out measure is 1/5 oz. fill *i.e.* 1 fluid,

'Six out' measure is 1/6 fill *i.e.* 5/6 oz. fluid.

One bottle containing 26 oz. fluid therefore serves :

21 '4 out' measure to a bottle

26 '5 out' measures to a bottle

32 '6 out' measure to a bottle

Wines: The normal wines served in a bar are the fortified wines *i.e.* Port, Sherry, Madeira, and consequently obtain their best flavour when be served cold. The bottle normally contains 26 oz. fluid. These wines are usually served in a 21/2 oz. steam glass serving 2 oz. per persons. Thus 13 measures to the bottle should be obtained. When serving any fortified wine it is poured directly into the glass preferably in front of the customer.

Aromatic wines such as Dubonnet, Campari, Italian and French Vermouths etc. are in continental bottles of capacity which works out at 35 oz. fluid. The normal quantity served per person is 2 oz. They however, are served in 6 oz. wine glasses, as it is normal to add a slice of orange or a lemon and a cube of ice. As a long drink they are sometimes diluted with soda.

INTERNAL ADMINISTRATION

Internal controls in the bar centres around the bar manager. Controls involves three aspects :

Inventory : Control of inventory begins at receiving. Written records, in the form of purchase orders must be used. These orders specify the brand, quantity, bottle size and price. The receiving clerk matches this purchase order with the delivery invoice delivered along with the supplies. All deliveries must be physically checked. For broken or missing bottles, a credit memo is made out.

All beverages, being very expensive, must be kept under lock and key and access must be limited to only a few authorised personnel, namely, storekeepers. As soon as supplies are received, they must be entered in the perpetual inventory record, which is kept up to date by the storekeeper. In the store, all bottles must be systematically arranged by type, brand and size. Simultaneously, an account must be maintained of the liquor behind the bar maintained per stocks. This helps in resupplying, when empty bottles are exchanged for full.

At the bar itself, drinks must be prepared consistently. All bartenders must know the correct amount to be used in drinks, and should use measures without wastage and spillage. A computerised dispenser may be used for this purpose if possible.

Cash : Cash control is very necessary too. A National Cash Register (NCR) may be used for this purpose. All postings of drinks consumed must be made at once on the basis of properly made BOTs. Receipts must be compared with the money received, to ensure that all drinks are paid for.

Employee : The establishment must hire skilled and reliable personnel (through job applications and interviews, after checking references). Written rules should be established and enforced, and communication between the management and the employees is essential.

The bar manager should take periodic inventories, and compare the liquor used with the sales to evaluate the efficiency of the establishment.

Bartending : Prior to service, mise-en-place in the bar involves:

1. Making a liquor requisition on the basis of the par stock to be maintained at the bar, and exchange empty bottles for full ones. Arranging all bottles systematically and ensuring proper inventory control.
2. Transfering popular brands to a 'speed rack' at the counter.
3. Arranging all glasses systematically ensuring that they are clean, and not chipped or cracked.
4. All the bar tools such as bar spoon, knife, ice scrap, others should be kept handy.
5. Garnishes (either freshly prepared or cut in advance) are covered or refrigerated.
6. Bins are filled with icecubes/crushed ice.
7. Sufficient cash is kept ready and the NCR checked for smoothly functioning.
8. Napkins, ashtrays, etc. arranged.
9. Personal grooming checked.

BASICS FOR CHECKING

The professional dining room manager's biggest job is dealing with the guests he serves and the staff who provide this service though the various types of service which requires varying degrees of technical skill. A dining room manager must have the ability to deal with people.

What is Supervision ? Supervision is defined as getting work done through people, but that is a simplified explanation. Supervision involves the following activities :

1. Deciding what work is to be done.
2. Dividing the work into specific tasks.

3. Deciding how the tasks are to be performed, that is, the standards that must be met.
4. Obtaining any equipment or materials needed to perform the task.
5. Obtaining any information that may be needed to perform the task.
6. Assigning the task to specific workers.
7. Instructing them about what the task is and how it is to be performed.
8. Observing the performance of the task according to instructions.
9. Determining the cause of any substandard performance and taking corrective action if necessary.

The function of supervision is continuous. It is not the job that ends with the completion of the task or assignment. There is always the performance of work to be overseen, corrected, and planned.

By accepting responsibility, the supervisor assumes an obligation to perform certain functions, and run the department in a certain way. If he does not carry out this obligation, the department will not function effectively and efficiently. Some of the dining room manager's specific responsibility include the following :

1. Enforcing the policies and standards set by management.
2. Seeing that the desired quality of service is given.
3. Seeing that the operations in his department comply with all applicable laws (including labour laws, liquor laws, and if applicable, consumer protection laws etc.)
4. Maintaining safe conditions for both guests and employees.
5. Controlling costs within his department and protecting the property of company.

Generating Sales wherever Possible : The other aspect is the authority. The supervisor must be able to take certain decisions keeping in mind the authority delegated to him by the management for the smooth operation of the department.

Policy and Standards : The guidelines for handling certain decisions is common for all the departments. For example, employees' leave.

Leadership : The process of supervision by a particular person is called his leadership style. Behavioural scientists have identified four types of leaders :

1. Authoritarian
2. Paternalistic & Participative
3. Democratic
4. Abdicative

Authoritarian : This type of the leader is more of an autocrat. He is the "I am the boss type". He makes all decisions arbitrarily without consulting anyone for information or opinions on the matter. He usually considers the employees greatly inferior to himself, assuming they are motivated, only for their personal gain and not interested in the requirements of the company.

Paternatistic Leader: This is the "Father knows" best type of leader. He differs from an authoritarian in that he cares about the welfare of the staff and wants them to be happy. The price he asks in return is that they accept all his decisions without question. He assumes that other employees are not competent enough make decisions. He may select certain individuals to be groomed for management, but he probably does not permit them to contribute very much.

The Democratic and Participative Leader: The democratic leader identifies the problems and refers them to his group to resolve by votes of majority. This type of leader is usually much

more successful than the autocrat or the paternalist in getting people to work for him. He involves the group in decisions that effect them.

The Abdicative Leader : He is really a “now-leader”. He lets his staff take the daily decisions about when and how they shall work. However, this does not mean abdicative leader is idle. Infact he may be the busiest person in the dining room-bustling about, fussing about serving coffee and fetching silverware from the kitchen. One can call him a highly paid busboy rather than a true leader.

The Supervisor’s Responsibility to the Staff:

1. To give people complete instructions and guidance as to what is expected of them.
2. To provide a safe, clean working environment.
3. To make available the equipment and material people need to do their jobs.
4. To give a fair hearing to their suggestions and complaints.
5. To correct any work performance that is not meeting the standards required.
6. To recognize good performances and let the employee know where he stands.
7. To have personal respect for the dignity of each individual.
8. To be fair in making judgements and enforcing rules and regulations.
9. To understand the worker’s feelings, that their values and priorities may not be same as the boss.

Discipline Versus Corrective Action : On the job, discipline can sometimes be revenge for past behaviour rather than prevention of certain future behaviour.

What one should be really concerned with is corrective action, the last step in the sequence of activities that constitute supervision. The object is to move or motivate the individual to a desirable performance in the future, regardless of past performance. Vindicative disciplinary action by the supervisor is more likely to cause resentment and a negative response. Poor work performance may indicate a need for additional training rather than reprimand.

When criticism or a reprimand is in order, it should be given in a positive manner. Correct the specific behaviour, not the person.

9

WINE MANNERS

OPENING BOTTLES

All wine bottle openers have a corkscrew with a spiral edge and a sharp tip, used to pierce the foil around the cork. The corkscrew should be inserted into the cork absolutely straight and then driven in a clockwise direction.

The tip should never pierce the cork as it could dislodge particles of the cork into the wine. The corkscrew is moved clockwise till 3/4 of it is above the mouth of the bottle, and then it is moved anticlockwise to dislodge the cork from the opener. Sparkling wine bottles are always opened with bare hands. The different types of wine bottle openers are:

T-spiral: The oldest type of opener, it is best used for opening bottles of white wines. It consists of a simple T-shaped implement, the spiral comprising the vertical limb of the T, while the handle forms the bar. After removing the tin foil from the bottle, the cork is wiped with a waiter's cloth. The opener is held horizontally, then turned over into the vertical position and inserted into the centre of the cork.

T-spiral with Cap : This opener resembles the T-spiral, but has a metallic cap around the screw. The corkscrew is driven into the cork till the cap grips the mouth of the bottle. The screw is then moved clockwise till the cork is 3/4 above the mouth; finally the screw is moved anticlockwise to dislodge the cork.

Wooden Double Barrel: This opener consists of a corkscrew encased in two wooden barrels or cases, one above the other. One barrel, when moved clockwise, makes the screw descend, and the other, when turned anticlockwise, makes it rise.

Angel Wings Wine Bottle Opener : The most popular multipurpose wine bottle opener, the angel wings opener has two projecting metallic wings on either side of the screw, with a handle on top. When the handle is moved' clockwise, the wings rise till they are horizontal (which lifts the cork upwards); after this, the wings are pulled down to raise the cork and then the handle is moved anticlockwise to dislodge the cork. The screw has a plastic cap at the bottom to protect the cork.

Waiter's Friend : A multipurpose wine bottle opener, the waiter's friend is a can opener, knife, bottle opener and wine bottle opener rolled into one. After pushing the screw into the cork, the other end of the opener is pressed down over the edge of the mouth of the bottle. It is then pulled up and moved in an anticlockwise direction.

Role of Red Wines

Red Wines are of Three Types : Young (which have been matured for a short period and have no sediment or lees), moderately old (which have a small amount of sediment) and very old red wines (which have heavy sediment)

The equipment required for the service of red wine includes :

(i) The ordered wine bottle

(ii) A wine bottle opener

(iii) Red wine glasses

(iv) A quarter plate

(v) A waiter's cloth

(vi) An ashtray

(vii) A wine salver (14' diameter)

The procedure followed for the service of young red wines is as follows :

(i) The wine list is presented.

(ii) The guest's order is taken and the BOT (Beverage Order Ticket) cut.

(iii) The wine bottle is taken from the main bar or the cellar and the BOT deposited.

(iv) The rest of the equipment is checked , laid on the wine salver, and placed on top of the sideboard.

(v) The wine bottle is presented. A folded waiter's cloth is spread on the left forearm, and the bottle supported on it with the label on top, & the base of the bottle gripped with the fingers. On the right of the host, the neck of the bottle is raised so that the label is clearly visible, and simultaneously the name (and vintage year, if any) of the wine announced.

(vi) A wine glass is placed on the right of the host, just below the water goblet. Glasses for all the guests are placed and the ashtray is placed in the centre of the table. The wine bottle and the rest of the equipment is placed on the right of the host.

(vii) The bottle is opened and the cork smelled. The cork should smell of wine and not cork; a corky wine is spoilt. The cork is placed on the quarter plate and presented to the host for his approval. If the wine is corky, the waiter must inform his superior-a new bottle may be opened.

(viii) A small pad of the waiter's cloth is made and held it in

the left hand. The wine bottle is held in the right hand, with the index finger on the shoulder, three fingers on one side and the thumb on the other side. 1/8th of the wine is poured into the the host's glass, for approval of temperature. The mouth is wiped with waiter's cloth. The wine may be 'over' (warmer than the desired temperature) or 'under' (cooler than desired). In either case, the host is asked if the entire wine should be left for 'rooming' or 'chamber' (to attain room temperature), or whether less than half the wine should be served right then. In the latter case, the bottles are placed on the sideboard.

If the wine is 'over' it may be cooled by placing in the refrigerator for a while. To warm the cool wine, an uncorked bottle is placed in the room.

(ix) The guests are served, in the correct sequence, serving the host in the end. If any wine is left over at the end, the bottle is placed on the host's right, with the label facing the host. The quarter plate is removed and the opener is placed on the sideboard.

(x) If the host wants another bottle of wine opened, the entire procedure must be repeated, and the glasses should be changed. The ashtray is changed when needed.

(xi) For moderately old or very old wine, decanting is recommended, *i.e.,* transferring wine from the bottle to a carafe or decanter, for separating wine from the sediment. Decantation must always be done in the cellar, so that the lees are not disturbed while moving the wine bottle.

For decanting, a funnel is placed in the decanter, with a tall burning candle, behind it, for light. Holding the wine bottle carefully, the wine is poured into the decanter until the wine is just above the lees in the bottle. The rounded shoulders of the bottle hold ,the sediment and prevent it from escaping. The

original bottle and cork is taken to the host along with the decanter, for his approval.

If the host wants the wine to be opened at the table, the bottle should be brought to the table in a wine cradle, in order to disturb it as little as possible. The bottle is opened in a lying position, and is then presented in the cradle itself. It is taken to the cellar, decanted and served.

Role of White Wines

All white and rose wines are served cold, at a temperature of 48-50°F while sparkling wines are served chilled. To maintain the coolness of the wines, wine buckets or wine coolers are used. These are of three types :

1. A small wine cooler, used for white and rose wines, with a quarter plate as an underliner.
2. A large Champagne cooler, used for sparkling wines, with a large plate as an underliner.
3. A wine cooler with a stand (in the absence of which a half plate may be used as an underliner). The stand has a flat disc with a hole in the centre, to allow moisture to drip through it. While the exterior of the wine cooler is highly polished, the interior is made of an insulating material and has a matt finish. This wine cooler may be used for white, rose or sparkling wines.

While serving white wine, the bottle is first placed in an angular position in the empty wine cooler, which is then filled with ice cubes and some water. The water, besides having a better cooking effect, also makes the replacement of the bottle in the wine cooler, much easier. The wine cooler is covered with a waiter's cloth, folded in half, which is used for wiping the bottle when removing it from the cooler. The equipments required for the service of white wine are as follows :

(i) The ordered wine bottle.

(ii) Wine cooler with underliner.

(iii) Required number of white wine glasses

(iv) Wine bottle opener.

(v) Two waiter's cloths, one to be used to wipe the bottle and cover the bottle in the ice-filled wine cooler, and the other, placed on the waiter's forewarm, to be used to wrap the bottle (in order to prevent to hands from warming the wine. This is not needed if gloves are used).

(vi) Ashtray and quarter plate.

(vii) Wine salver.

The procedure for serving white wines is as follows :

(i) The wine list, is presented, the order taken, and a BOT (Beverage Order Ticket) cut. All the equipments are collected and brought to the sideboard.

(ii) Glasses and the ashtray are placed on the table. One quarter plate is placed on the side, to be used for presenting the cork. The wine cooler and the wine bottle opener are left on the table. If a wine cooler with a stand is being used, it is placed on the right of the host. The wine salver is removed to the sideboard.

(iii) Holding the mouth of the bottle with the waiter's cloth, it is removed from the wine cooler, simultaneously wiping the bottle with the waiter's cloth covering the cooler.

(iv) The bottle is presented, with the label facing the host, and the name of the wine is announced, along with the vintage year, if any.

(v) The bottle is placed on the right of the host and opened. The cork is presented for the host's approval.

(vi) The waiter's cloth, is folded into four on the neck of the bottle and folded at the two ends diagonally across each other. The doth is pulled downwards, holding the two ends, thereby tightening it around the bottle. The bottle is held with the index finger at the point where the two ends of the waiter's cloth cross.

(vii) A little wine is poured for tasting. To stop the flow, pouring is stopped and the bottle is twisted slightly upwards (this can only be done in the case of white wine. If this was done with a bottle of red wine, the wave thus created would disturb the sediments at the bottom of the bottle. White wines however, do not have sediments).

(viii) If the host is not satisfied with the wine, and if it is over chilled or under chilled, the bottle would be either kept for rooming or replaced in the wine chiller. The host may also like a part of the wine to be served right then wine. It should again be offered for approval, before being served to the guests. If any wine is left over, the host is asked whether the bottle should be left on the table, or replaced in the wine chiller. If the bottle is to be placed in the chiller, it's neck should be away from the host.

If the host would like another bottle of wine, the entire process must be repeated all over again, changing the glasses as well. White wines are best with white meat, namely chicken or fish. Dry Chablis is specifically suited to oysters.

Role of Champagne

Champagnes are mostly dry, if not specifically mentioned. They include the following brand names : Dom Perignon, Charles Hiedsieck, Moet et Chandon, Veuve Clicquot Ponsardin (white and rose), Laurent Perrier (white and rose), Alfred Rothschild, Perrier Jouet, Mercier, Bollenger, Lanson, Lanson Black Label, Blanc de Blanc. All sparkling wines are served in the same manner, at 45°F, covered with a napkin, called a 'baby wrap'.

Whereas Champagne is served in Champagne flutes, saucers or coupes, other sparkling wines are served in an all-purpose tulip. The bottle is always opened with bare hands; the cork is never given for smelling and the wine is offered for tasting. The host is always served first, followed by the guests.

Champagne may be served in three ways :

1. At any time, of the day with any food, in a champagne coupe.
2. At a celebration—in a Champagne saucer. For this the bottle is agitated, to build up the pressure. The cork flies off and the champagne is poured intermittently into the ready glasses, giving time for the froth to settle before pouring further.
3. With food—in a Champagne tulip/flute. Less surface area is exposed, so the gas escapes slowly—also the flute occupies less space on the table.

If champagne is ordered, it is served from the bottle; but if it is served complimentary, the glass full of champagne is brought from the bar. The bottle is kept closed by using a special stopper.

The procedure for serving Champagne (and other sparkling wines) is as follows:

(a) The wine list is presented and the order taken.

(b) A BOT is made out and all the equipments are bought.

(c) The bottle is placed in the Champagne cooler with ice and water. It is wrapped with a napkin and covered with another napkin when brought to the table.

(d) Ashtray and glasses are placed on the table. The cooler is placed on the right of the host.

(e) The bottle is removed from the cooler, simultaneously wiping it. Holding the neck of the bottle with the other napkin the bottle is presented, announcing the wine. The bottle is placed on the table and wrapped.

(f) The bottle is opened. First, the tourniquet and the foil are removed. The wire loop is twisted and the wire removed. Holding the bottle (wrapped in the 'baby wrap') at 45° angle from the glass, in the right hand with the

thumb on the cork, the cork is grabbed with the left hand, twisted off and the wine poured into the glass.

(g) Then the bottle is rewrapped and replaced in the chiller.

Brand Names of Champagne

1. Dom Perignon
2. Charles Hiedsieck
3. Moet et Chandon
4. Laurent perrier
5. Perrier jouet
6. Mercier
7. G.H. Mumm's-Cardon Rouge
8. Pol Roger
9. Veuve Cliequot ponsardin
10. Lanson Black Lable
11. Alfred Rothschild
12. Bollenger.

THE MIXINGS

The following alcoholic beverages are best served with the combinations mentioned below :

Whisky

(a) Whisky may be consumed straight (neat) in an old-fashioned whisky glass.

(b) On the Rocks-Three or four cubes of ice are put into the glass, and then the spirit is poured over. Putting the ice in first helps cool the whisky at a faster pace and also prevents splashing.

(c) Whisky may be served with water and ice.

(d) It can be served with soda and ice.

(e) It may be served with a mixture of half a soda and half water.

(f) Whisky may be consumed with mineral water.

(g) It may be mixed with tonic water.

Avoid mixing whisky with juices as it spoils the aroma of the whisky.

Gin : May be consumed

(a) Straight

(b) On the rocks

(c) With tonic water, well-chilled

(d) With Lime cordial and soda

(Without soda, it is a ‘gimlet’. A sweet gimlet has equal quantities of cordial and gin, with cherry and a dry gimlet has 15 ml cordial, 45 ml. gin and is garnished with a olive or lemon slice. It is stirred with ice in a mixing glass, strained and served).

(e) With citrus drinks like Limca or Citra.

(f) With Lemon juice and soda.

(g) Gin can replace vodka in many cocktails such as Bloody Mary and Screwdriver.

Vodka

(a) Vodka is best consumed neat and well-chilled, drunk in one gulp.

(b) It may be served with soda or water.

(c) Vodka may be served with various juices as a cocktail.

(d) It can be mixed with citrus drinks like Limca.

Rum : May be consumed.

(a) With cola, well-stirred. (The best mix)

(b) With water and ice.

(c) With soda and ice.

(d) As a soothener in winter, with lukewarm water.

Brandy : May be consumed :

(a) Straight (Cognac is served in a brandy inhaler; other brandies are served in an old fashioned whisky glass).

(b) With lukewarm water.

(c) With Ginger Ale at room temperature.

(d) With 1 teaspoon honey, 2-3 drops lemon juice, 1/2 teaspoon ginger juice, mixed with 30 ml. Brandy and water as desired, to obtain a good soothener.

Beer : Beer would always be served chilled but ice should never be added as it absorbs carbon dioxide and makes the beer flat, which can cause dysentry. Beer should be poured into a tilted glass from the side beer of the glass, so that a good head of foam is formed. Beer may be served in tankards, mugs, goblets and various other types of beer glasses. It is most appropriately served in a glass, so that 2½ glasses can be obtained from 650 ml beer bottle.

Fortified Wines : 60 ml of a fortified wine are served per portion, and it must be served in the appropriate glass at a temperature of about 48-50°F (port at 54°F). If a bottle is opened, it must be opened with bare hands, as most fortified wine bottles (especially port and sherry) have a mushroom cork. Otherwise the service is the same as that of red wines.

Mixed Drinks

There are a rich variety of theories to account for the origin of word ‘Cocktail’. All that is know for certain is that Cocktails as they were called in the American Bars came into popularity after the 1914-18 war and reached their zenith in the late twenties and early thirties. Cocktail is taken before any meal to stimulate the appetite and aid in digestion. “It is a mixed drink made of spirits, bitter, flavouring and may be sugar syrups. This

definition however is not strictly accurate as all Cocktails may not contain all four of these ingredients.

Qualities of a Good Cocktail

1. It must whet the appetite and not dull it. This first basic requirement of a good cocktail automatically eliminates a host of over-sweetened over-fruit juiced, over-egged, over-creamed cocktails.
2. It should stimulate the mind as well as the appetite. A well-made cocktail is one of the most delicious of drinks. It pleases the senses. The sheer delight of those who usually partake this refreshing drink breaks the ice of formal reserve.
3. It must be pleasing to the palate. In order that a Cocktail may satisfy the palate, it must be dry, yet smooth, indeed in compounding a Cocktail, the first thought should be the production of a drink sufficiently dry to wake up the taste buds yet not so sour or so bitter or so aromatic as to be impalatable.
4. It must be pleasing to the eye.
5. It must have sufficient alcoholic flavour to be readily distinguishable.
6. It must be well-iced.

Cocktail Ingredients : Every Cocktail properly so called, must contain two distinct types of ingredients.

It also may but need not necessarily contain a third type. They are :

1. A base.
2. A modifying agent, smoothing agent.
3. Additional flavouring and colouring ingredients.

A Base : This is the fundamental and distinguishing ingredient of the Cocktail and usually comprises more than 50% of the

entire volume of the Cocktail. Strictly speaking the base must always consist of spirits like—Whisky, Gin, Brandy. By common acceptance however combination of various liquors or aromatic wines as a base have also come to be called as Cocktail. For example-A mixture of Italian and French Vermouth with bitter. Normally the Cocktail base will consist of a single liquor and this one liquor being the distinguishing and predominant ingredient determines the type of Cocktail. Thus we have gin-based Cocktail, whisky-based Cocktails, rum-based Cocktail and within certain limits it is possible to combine two liquors as a base.

A Modifying Agent: It is an ingredient in combination with the base which characterises the Cocktail and without this ingredient the base no matter how vigorously shaken, how thoroughly chilled would still not be a cocktail & would remain merely a chilled liquor. Its functions are to smooth down the biting sharpness of the liquor and at the same time to add character to its flavours. The flavour of the modifyer in itself should never predominate but should always remain submerged.

The modifying agents can be further divided into 3 groups.

Aromates : Include aromatic wines such as French and Italian Vermouths, bitters of various types. For example *e.g.* Angostura bitter.

Bitter : The generic name of highly flavoured pungent and bitter liquor compounds which are prepared from the fruits, bark, roots, or leaves of various trees and plants, mostly from sub-tropical or tropical counties. They bear the name either of whatever flavour they may be or the registered names of the people who make them *i.e.* Angostura bitter.

Fruit Juices : All fruit juices which are used such as orange, lemon, pineapple, tomato etc. with or without sugar.

Miscellaneous Smoothing Agent : These include all types of sugar syrups, cream, eggs, milk etc.

All these modifying agents, particularly the aromatic wines and above all the bitter must be used with great discretion. Just how far one should go with each agent one has to learn with experience, relying both on his palate and on the comments of his friends. With bitters the safe rule is that never more than one or two dashes with a special sprinkler top to each drink. It is somewhat more difficult to lay down any general rule as to the use of citrus juices.

In using cream or eggs one must remember that one is preparing a drink to stimulate the appetite and not dull it. The object of using cream or eggs is merely to produce a drink pleasing to the eyes because of its creamy and foamy texture and at the same time make it smooth tasting. A reasonably safe rule for these miscellaneous smoothing agents is a maximum of 1/2 white of an egg, one yolk of egg, 1 teaspoon full of cream, one teaspoon of sugar syrup to each drink.

Additional Flavouring Agents : These include all the various cordials and liqueurs, sometimes the ingredients which are used as a modifying agent in one cocktail may be used for flavouring and colouring in another.

Classification of Cocktails : It is estimated that there are over 10,000 mixed drinks and cocktails in use. It is quite obvious that it is impossible for any one man to know them all. The greatest problem that faced the bartenders when cocktail became a rage was to ensure uniformity in their composition. The United Kingdom Bartenders Guild (U.K.B.G.) made this one of their main objectives over a period of years. They have compiled a Cocktail recipe book which is universally accepted as an authentic method of dispensing the drinks.

Iced mixed drinks can be roughly divided into four groups. Following is a short selection of the few standard drinks in each group.

Aperitif: These must stimulate the appetite. They must, therefore, be appealing to the eye and have an immediate effect.

Broadly speaking, these drinks are usually made from wines mixed with the spirit, *e.g.* Dry Martini, Manhattan; Rob-Roy etc.

Cocktails : This is the largest group of all, and consists of all short, shaken mixed drinks. They should contain a spirit base, colouring and flavouring ingredient and may be a fruit juice or other modifying agent. Most common ones are Sidecat, White Lady, Bronx etc.

Long Drinks : These are served in tall tumblers such as High Balls, or Collin's glass.

Stimulants : Instead of going to the doctors, if one has to put one self into the hands of the bartender when one has a hangover, and he will prescribe cocktails for one's needs. These are also described as "Pick-me ups." Champagne Cocktail etc.

Aperitifs

(a) *Martini:* When taking orders for Martinidry or sweet, one must always make sure that the customer is asking for a Martini Cocktail and not simply a Martini Vermouth, sweet or dry. The latter is simply a Martini Vermouth with ice, a slice of orange and may be a splash of soda if required and served in goblet type glass.

(b) *Dry Martini:* 45 ml. dry gin, 15 ml dry vermouth (French) with cubes ice in the mixing glass, strain into cocktail glass, and serve with an olive, or squeeze a twist of lemon peel on top.

(c) *Sweet Martini:* 30 ml. dry gin, 30 ml. sweet vermouth (Italian) stir and strain as before, add a cherry.

(d) *Sweet Manhattan :* 30 ml. Rye whisky, 30 ml. sweet Vermouth, stir and strain into a cocktail glass, add a cherry.

(e) *Dry Manhattan:* 45 mls. Rye whisky, 15 ml. Dry vermouth, a dash of Angoustra bitter. Stir and strain into a cocktail glass.

(f) *Bamboo :* 30 ml. Dry sherry, 1/4 French vermouth, 1/4 Italian vermouth, stir and strain as before. Add a twist of lemon peel.

(g) *Dubonnet :* 30 ml. Dry gin, 30 ml. dubonnet. Stir and strain into a cocktail glass, add a twist of lemon peel.

(h) *Rob-Roy:* 45 ml. Scoth whisky, 15 ml. sweet Vermouth, a dash of Angoustra bitter, stir and strain into a cocktail glass, add a cherry.

Cocktails

(a) *Bronx:* 30 ml. Dry gin, 15 ml. fresh orange juice, 15 ml. French Vermouth. Use a shaker and strain into a cocktail glass.

(b) *White Lady :* 30 ml. Dry gin, 15 ml. Cointreau, 15 ml. fresh lemon juice. Use a shaker and strain into cocktail glass.

(c) *Side Car :* 30 ml. Cognac brandy, 15 ml. Cointreau, 15 ml. fresh lemon juice; Use a shaker and strain as before.

(d) *Pink Lady :* 30 ml. White of egg, 30 ml. dry Gin, dash of Grenadine. Shake well and strain into a frosted glass.

(e) *Bacardi :* 30 ml. Bacardi rum, 15 ml. lemon juice, 15 ml. grenadine.

(f) *Alexandera :* 30 ml. Cognac Brandy, 15 ml. Creme de Cacao white, 15 ml. French cream. Shake well and strain into cocktail glass.

Long Drinks

(a) *Horse Neck :* Peel the lemon into a continuous spiral strain, hang it from the edge of a high ball glass. Place few cubes of ice in the tumbler and a dash of Angostura bitter, 60 ml of brandy, fill with Ginger Ale.

(b) *High Balls :* A cube or two or ice in the high ball glass with the desired spirit and mineral water or plain water.

(c) *John Collins :* Tall glass or a Collins glass, gin, 15 ml. lemon juice, cubes of ice, 1/2 teaspoon of powdered sugar. Stir with a long spoon and add soda.

Note : John collins is usually prepared with Hollands Dry Gin whereas Tom Colins is prepared with London Dry Gin.

(d) *Gin Fizz :* Pour 60 ml. gin, 15 ml. lemon juice, a little sugar syrup or powdered sugar. Shake well pour into a sour glass (Delmonico) and add soda. A little white of egg can be added to the shaker to retain the froth for a longer time.

(e) *Pimms' Cup :* There are a number of pimms cups :

Pimms Cup No. 1	With Gin
Pimms Cup No. 2	With Whisky
Pimms Cup No. 3	With Brandy
Pimms Cup No. 4	With Rum
Pimms Cup No. 5	With Vodka

A tankard is used, put a little cucumber peel, a little fresh fruit (season wise, grapes, oranges, apple) add some cubes of ice and 60 ml of the appropriate spirit. Fill the tankard with lemonade.

Stimulants (Pick-Me Ups)

Flips : All flips are usually prepared as follows :

Use a shaker, a yolk of egg, a teaspoon of powder sugar, 60 ml. of sherry port or 60 ml. of spirit depending upon the type of flip required. Shake well and strain into a cocktail glass, grate a little nutmeg on top.

Noggs : Into the shaker, one whole egg, a little powder sugar, 60 ml. of sherry, port or 60 ml. of desired spirit depending upon the type of Nogg required. 1/4 pint of milk. Shake well and hard, strain into a tall glass or tumbler, grate a little nutmeg on top.

Champagne Cocktail : Into a Champagne coupe glass, place one cube of sugar saturated with Angostura bitter, one slice of orange and fill the glass with Champagne. A little brandy can be added where desired.

Pousse Cafe: This is an exotic drink consisting of liqueurs of different colours floating one on top of another according to their densities in a straight-sided tall glass.

Examples :

1. *Pousse Cafe Americano :* Equal portions of Marashino liqueur, Curacao (Red), Chartruse (green) cognacy brandy.
2. *Pousse Cafe Finnalandia:* Equal portions of Grenadine, Creme de Methe (green), Marashinao and Curacao.

Cocktails : Recipes

Between the Sheet	1 dash of lemon juice
	15 ml. Brandy
	15 ml. Bacardi Rum
	15 ml. Cointreau
	Shake well and strain into cocktail glass. (6 portion)
Cherry Blossom Cocktail	30 ml. Curacao
	30 ml. Lemon Juice
	30 ml. Grenadine
	150 ml. Cherry Brandy
	120 ml. Brandy
	Shake well thoroughly and serve very cold.
Daiquiri Cocktail	1 teaspoon powdered sugar
	15 ml. Fresh Lime Juice
	45 ml. Bacardi Rum
	Shake well and strain into cocktail glass.

Gibson	10 ml. Dry Vermouth 50 ml. Gin Stir well and strain into cocktail glass. Squeeze lemon peel on top and add an onion.
Grasshopper	14 ml. Creme de Menthe (green) 30 ml. Creme de Cacao (white) 45 ml. Rum Shake and strain into a large size cocktail glass.
Paradise Cocktail	1 dash Lemon juice 15 ml. Orange juice 30 ml. Gin 15 ml. Apricot Brandy Shake well and strain into cocktail glass.
Rolls Royce	1 Dash Benedictine 15 ml. Dry Vermouth 15 ml. Sweet Vermouth 30 ml. Dry Gin Shake well and strain into cocktail glass.
Americano	15 ml. Campari 45 ml. Sweet Vermouth Lump of ice Use a wine glass or a goblet. Fill with soda, stir and add a twist of lemon peel.
Bloody Mary	45 ml. Vodka 90 ml. Tomato Juice Tomato juice, 2 dashes of Worcestershire sauce,

	Tobasco Sauce (optional), salt and pepper.
Cuba Libre Cooler	60 ml. Bacardi Rum Juice of 1/2 a lemon Use long tumbler. Add ice and lime wine and fill up with coca cola.
Gin Sling	Dissolve 1 teaspoonful of sugar in water. 60 ml. dry gin. 1 lump of ice. Serve in a long tumbler which is filled with water or soda.
Negroni Cocktail	15 ml. Gin 15 ml. Sweet Vermouth 15 ml. Campari Stir well and strain into cocktail glass. Serve with a twist or orange rind.
Planters Pinch Cooler	30 ml. Lemon or Lime Juice 15 ml. Gommes syrup 1 dash Angoustra Bitters 60 ml. Jamaica rum. Shake, pour unstrained into tall tumbler, add a slice of pineapple and slice of orange and serve with a straw.
Rickey	Ice cubes Juice of 1/2 a lime or 1/4 lemon 60 ml. of any spirit (Whisky, Gin, Bourbon, Apple, Brandy) Add the spirit into medium sized glass, lime juice, ice and fill the glass with soda and leave rind of lime or lemon glass.

Screw Driver	15 ml. Vodka 2/4 Orange juice Stir well and strain into hi-ball glass Add a slice of orange.
Singapore Sling	Juice of 1/4 lemon 16 ml. Dry Gin 45 ml. Cherry Brandy Shake well, strain into medium-size glass and fill with soda, add cubes.
Brandy Fix	Place in a small tumbler. 1 teaspoonful of sugar. 1 teaspoonful of water to dissolve the sugar juice of 1/2 a lemon, 30 ml. of Cherry Brandy and 45 ml. of Brandy. Fill the glass with fine ice and stir slowly a slice of lemon and serve with a strain.
Smash	Dissolve 1 lump of sugar in a medium-size glass and add 4 leaves of mint, crushing the sugar and mint lightly together. Put a lump of ice in the glass and then add 60 ml. of Bacardi Rum, Brandy, Gin or Whisky. Decorate with a slice of orange and squeeze lemon peel on top.
Sours : (Gin Sour, Whisky Sour)	Juice of 1/2 a lemon 1 teaspoonful sugar 60 ml. of Gin Whisky Shake well and strain into medium-size glass and add a slice of orange and a cherry.
Fizzes : (Gin Fizz)	Juice of 1/2 a lemon

	1/2 a tablespoonful powdered sugar 60 ml. Gin Shake well, strain into medium-size glass and fill with syphon soda water.
Brandy Fizz	Juice of 1/2 a lemon 30 ml. tablespoon powdered sugar 60 ml. Brandy Shake well, strain into medium-size glass and fill with syphon soda water.
Sherry Sungaree	2 ml. sherry. 1 teaspoon fine sugar. Till the tumbler with ice and pour sherry and sugar. Grate nutmeg on top.
Port Sungaree	60 ml. Port Wine 1 teaspoon sugar. Till the glass with ice and pour port and sugar grate nutmeg in top.
Flips (Rum Flip)	1 egg yolk 1 teaspoon powdered sugar 60 ml. Rum, Brandy and port wine or Sherry wine. Shake well and strain into medium-size glass. Grate nutmeg on top. In cold weather a dash of ginger can be added.
Cobblers	Half tilt the glass with pushed ice, add one teaspoon powder sugar, 60 ml. Gim/Whisky/ Brandy/Port or shemy. Stir well and pour into the glass and decorate with a slice of orange.
Egg Noggs	1 whole egg

	1 teaspoonful powdered sugar 60 ml. of any desired spirit or 60 ml. of fortified wine. Milk 150 ml. Shake well and strain into long tumbler. Grate a little nutmeg on top.
Baltimore Egg	1 fresh egg 30 ml. tablespoon sugar 30 ml. Brandy 30 ml. Rum 30 ml. Maderia 1/2 a pint fresh milk. Shake well and strain into a long tumbler. Grate a nutmeg on top.
Rusty Nail	30 ml. Scotch whisky 30 ml. Drambuie Into the mixing glass add the ingredients, put some ice cubes. Stir and strain into a Roily-Polly glass, add orange peel as garnish.
Pina Colada	60 ml. gin 60 ml. Pineapple juice 60 ml. Coconut milk Take a cocktail shaker, add the ingredients, some ice cubes and shake it well. Strain into a Collin's glass and add pineapple slice as garnish.
B and B	30 ml. Cognac Brandy 30 ml. Benedictine Mix them well with some ice cubes

	in a mixing glass and strain into a Brandy Baloon Glass.
Black Russian	30 ml. Vodka
	30 ml. Kahlua
	Stir them in a mixing glass with ice cubes and strain into a parfait glass. Top it up with soda.
Margarita	45 ml. Tequila, 15 ml. Cointreau 10 ml. Lemon Juice.
	Stir them well with ice cubes in a mixing glass and strain it into a champagne strainer.
Gimlet	60 ml. Gin
	15 ml. Lime Juice cordial
	Stir them well with some ice cubes in a mixing glass and strain it into a cocktail glass. Garnish with lemon slice.
Harvey's Wall Banger	Harvey' Wall Banger
	30 ml. Vodka
	30 ml. Galliano
	150 ml. Orange juice
	Stir well and pour into the glass Garnish with orange slice and cherry.
	45 ml. Tequila
Margarita	15 ml. Triple Sec or Cointreau
	30 ml. Fresh lemon juice
	Pour all the ingredients into the cocktail shaker & shake well. Pour into the glass which has a salted rim. Put a slice of lemon around the rim of the glass.
Rusty Nail	45 ml. Scotch whisky

	45 ml. Drambiue
	Lemon peel
	Take a old fashioned whisky glass put some ice cubes and pour scotch and Drambiue in the glass.
	Serve with a twist of lemon.
Bombay Cocktail	60 ml. Brandy
	15 ml. Sweet Vermouth
	15 ml. Dry Vermouth
	3 dashes of Curacao
	Stir well and pour into a cocktail glass.
Tequila Sunrise	60 ml. Tequila and orange juice poured into float grenadine syrup to give an effect of sunnise.

Tools and Contents

Nowadays the cocktail habit is no longer a craze. People tend to prefer bars which dispense all types of drinks from a good glass of beer to more intricate concoctions. However, whether it is a cocktail bar or any other type of bar, certain essential equipments and ingredients are required to cater for all types of customers. Some of the essential equipment required are as follows :

One large and one medium-sized mixing glass or Bar Glasses with a lip for pouring. These glasses are used for preparing mixed drinks such as Martini, Manhattan etc.

Bar Spoons	For use with mixing glasses. They are long-handled silver spoons like Parfait spoons.
Hawthorn Strainers	Their coiled spring edge ensures a snug fit while straining from the mixing glasses.

Cocktail Shaker	Of different capacities for preparing all shaken Cocktails. They are silver containers with a lid and in-built strainer. An electrically operated blending machine, for preparing all types of shaken cocktails. Ideally suited for a very busy bar and for preparing well-blended smooth cocktails in very short time.
Boston Shaker	Consisting of two approximately 1 pint silver or stainless steel glasses (cups) which fit into each other. These are used for shaking flips, noggs etc. for large amount of ingredients for large shaken mixed drinks.
"Muddler" Spoons	These muddlers have a round flattened end for crushing mint leaves, fruit or sugar cubes as part of a drink preparation
Bitter Bottles	These bottles are fitted with conical sprinkler tops with a very small top opening to provide droplets or "dashes" as required in some cocktail receipes.

Other equipments include, a sharp knife, cutting board, ice buckets, ice tongs, ice scoop, ice shaver, the chopper, fruit squeezer for a busy bar, an electrically operated fruit squeezer, nutmeg grater, drinking straws, cocktail sticks, tin opener; bottle openers, juice strainer for fruit juices, wooden spoon for use while straining fresh fruit juices, small funnels for transferring liquids from one bottle to the other, salvers, cocktail napkins, coasters, ashtrays, candle stands, candles, match boxes; flower vases, toothpicks, cigar cutter, etc.

Other items depend on customer's whims and the location

of the bar in a hotel or a bar by itself on a busy street. These might include city maps, city entertainment diaries; time-tables for airways and railways, first-aid supplies music system, telephone, peg measures, optic measures, inverted fixed optic measures etc. All types of glassware including a good supply of cocktail glasses.

Ingredients : These might include, oranges, lemons, cucumber peels, fresh eggs, cream, milk, sugar, coffee, tea, olives, cherries, cocktail onions, cloves, salt, pepper, cinnamon, ginger, mint, nutmeg, sauces, tomato juice, good supply of clean ice etc.

Gin: London Dry, Hollands, Plymouth, Beefeater, Gordons, Old Tom, Indian Gin.

Whisky : Scotch, Rye, Irish, Bourbon, Canadian, Indian Whisky.

Rum : Jamaican Cuban Demerara, Bacardi, Indian Rum.

Brandy : Cognac, Armagnac Marc, Indian brandy.

Vodka : Imported as well as Indian.

Aromatic : Italian Vermouth (Sweet), French Vermouth (dry) Bianco, Wines, Dubonnet, Lillet, Campari, Cinzano, Nouilly Vermouths: Prat, St. Raphael.

Bitters : Angostura bitter, Amer Picon, Underberg; Fernet Brance; Peach bitter, orange bitter Alsinthe etc.

Syrups : Gommes (ordinary sugar syrup without any flavour); Rashberry; Strawberry, Gooseberry, Lime cordial; Grenadine etc.

Liqueurs : Cointreau; Creme de Menthe, Advocat, Chartreuse, Benadictine Curacao, etc.

Fortified Wines : Port; Sherry, Marsala.

Accompaniments with Cocktails: Cheese straws, crisps, olives, gherkin, (capers), for special functions etc.

Other Spirits

1. *Slivovitz:* This is a spirit which is distilled from plums, mainly from Hungary, Yugoslavia and Romania. It is very similar to the Alsatian Plum Brandy.
2. *Calvods :* A potent spirit distilled from cider. In U.K. the same product is known as Apple Jack.
3. *Aquavit:* A highly rectified colourless spirit, distilled mostly from grains and potatoes and flavoured with carraway seeds.
4. *Grappa :* A crude Italian spirit distilled from the husks, skins, pips and stacks of the grapes after they have been pressed and the wine made.
5. *Zubrowka :* A Russian spirit which is just as raw as Vodka but not so clear. It is in fact Vodka in which some Zubrowka grass has been steeped, so that it has a little colour, aromatic bouquet and a little bitter taste—whereas Vodka is colourless and free from all bouquet and taste.

Bar-equipment : The Bar should be simple, have a non-fussy shape and every drink and piece of equipment should have it's regular place, to which it is returned immediately after use.

It may be tedious to be so methodical, but it saves undignified scrambles in the night, as the professional bartender will testify. Some of the common equipments used in the bar are as follows:

A Lemon Squeezer : No particular design can be selected as the best, since it is a matter of personal taste as to which can be handled most easily and which extracts the juice most efficiently. If there are to be many guests, plenty of juice is squeezed beforehand for mixed drinks, but not so far in advance that it loses its freshness.

Ice Container : It should have the capacity and efficient insulation. If white wine or champagne are to be served, ice bucket containers in which they can be cooled are also required.

Tongs : These are more efficient than a spoon when ice is to be put into a glass and they do not carry any unwanted water.

Ice Crushers: Comes in various designs for crushed ice (sometime it is described as being shared) required for drinks, daiquiris and a variety of other treats. Crushers can usually be adjusted to produce cracked ice for drinks like the Old Fashion. Otherwise, cubes are taken in a tea towel and cracked with a kitchen mallet. If drinks are mixed in an electric blender, whole ice cubes will damage the blade, but this problem does not arise with mixers made especially for bars.

Jugs : Required for iced water for fruit juice and have an involuted power to hold back the cubes. These types of jugs are also used as mixing glasses and do not require strainers.

A Scoop : It is needed to load crushed or cracked ice into a drink, mixing glass or shakes.

The Bartender's Friend : It is an all-in-one device that opens corked or crown- topped bottles, is preferred and a bottle opener is permanently fixed to the bar.

Measure : It is known as peg measure to differentiate between a large peg and a small peg. The large peg measures 60 ml whereas the small peg measures 30 ml.

Bitter Bottles : These are fitted with caps like those used to pour vinegar over salad oil. This means that a dash of Angostura or orange bitters can be shaken without the need for measurement.

Mixing Glasses : These come in various shapes and sizes but are always big enough for the preparation of several drinks at once. The mixing glass, sometimes, known as a bar glass, is for drinks that are to be stirred not shaken. These are drinks that are intended to be clear, not cloudy, and which would be particularly harmed by the greater dilution caused in shaking.

After being stirred, the drink is strained into a cocktail glass straight up, or on to fresh ice in a large glass.

Muddlers : Comes in various shapes and sizes, large ones for use with a mixing glass and small ones for the drinker's own amusement. They have a bulbous end and are intended for crushing sugar and pounding mint in a drink. A similar device with a paddle-like end is called a swizzle stick. A swizzle stick adds decorative value in a drink.

Strainers : The classic strainer type that is popular, clips on to the mixing glass.

Bar Spoons : These are used to stir drinks in a mixing glass or after they have been served, the wrong end can be used as a muddler.

Shakers : These are used in drinks that contain fruit juice, syrups, very thick liqueurs, or any ingredients that demand a thorough mix. Because the ice gets knocked about in the mixer, there may be considerable dilution, and a clear drink cannot easily be produced.

Knife and Board : Easy to forget, yet obviously necessary. How else could one produce with easy efficiency skivers and twists of lemon or cucumber peels, and slices of orange, which are crisp clean and handsome ?

Useful Glasses

Cocktails : Essential, elegant and neatly proportioned. A stem just long enough to project the small conical bowl from the warmth of the hand. Opening sufficiently wide to display a garnish. Capacity 4 oz.

Old Fashioned : It is used for any cocktail, served on the rocks that also doubles for whisky. The typically old fashioned glass is less attractive for that purpose than the cut-crystal and faintly tampered tumbler, traditionally used for Scotch. Has a capacity of 6 oz.

Hi-ball: An intermediate size which can serve several purposes. Capacity 10 oz.

Collins: For long drinks, the taller the better. Always narrow often with perfectly straight sides. Has a capacity of 10 to 12 oz.

Sour : A stemmed glass for a drink which is not strictly a cocktail but is not long. A similar glass is sometimes used for a fizz. Has a capacity of 5-6 oz.

Sherry: Those tall schooners are stilted and lumpy and do not hold the bouquet. A dry sherry in a large glass warms before it is drunk. It is better to have a small glass which can be refilled from a cooled bottle. Has a capacity 2 oz.

Pousse-cafe : A tall narrow liquor glass.

Liqueur : Rich sweet liquors are served in small quantities. Has a capacity 1-2 oz.

Snifter : The traditional brandy glass well-rounded to be warmed in the palm of the hand with a short stem. The rim turns in to hold the powerful bouquet.

Champagne : It can accommodate the garnish on a champagne cocktail better than the narrow tulip glass, which is preferable because it retains the sparkle better.

White Wine : A long stem so that the hand does not warm the drink. A tall narrow bowl to retain the cold. A fine line for a delicate wine.

Red Wine : Solid-looking to match the fatness of burgundy or Claret with a short stem and rounded bowl to be embraced warmly. The rim wide enough to let the wine breathe.

Toddy : Fire-proof glasses with handles are useful for hot drinks.

Bar-trade Tips

1. A sharp knife is used to cut fruits for garnish.
2. The fruit garnish is covered with a damp cloth to maintain their freshness and crispness.

3. The bar equipments are always clean and dried after every use.
4. As soon as the tin juices are opened they are poured are out in clean glass jars to avoid tanning.
5. The ice once used is never reused. The second drink might get spoiled.
6. Some lukewarm water is sprinkled on the ice cubes. It removes the glossy appearance and makes them shiny.
7. Cocktails made with juices, egg-white and cream are always shaken.
8. Cocktails made with Vermouths and Bitters are always stirred.
9. Rubber mats are used on the floor to avoid slipping.
10. The drink is always in the peg measure holding the peg measure on top of the glazes. Any spillage goes in the glass but not out of the glass.
11. Always replace the lid of the bottle after each use no matter how busy one is.
12. The bottle is placed back in its position after each use and helps in remembering as to where the particular brand of bottle is lying.
13. Ice scoop is used to put ice cubes. One should never try to use a glass for this purpose because if the glass breaks one would have to throw away the entire ice.
14. Juices and fresh cream are tasted before using them for cocktail. It helps in minimizing wastage of liquor.
15. The cocktail shaker and strainer are cleaned after each use so that the next drink is not spoiled.
16. After polishing glasses they are stocked the upside down so that dust does not collect in them.
17. A small diary should be maintained in which one notes down all the recipes of cocktails alphabetically.

18. Sodas and beers are chilled before service, if they are flat the drink will be spoilt.
19. Ice cubes are always put in the glass first, then the drink poured over ice cubes.
20. Seeds are removed from the fruit garnishes before using them.
21. Remember one short talk with the guest can help one sell one extra drink.
22. The bottles of lime juice, squashes and sauces should be wiped before using.
23. Behind the counter it is ensured that the empty bottles and juice tins are thrown in the dustbin and not be placed on the floor as they cause in convenience.
24. Beer bottle needs an a angle while opening. This helps avoid the beer from fizzing out.
25. One should never open a new bottle unless the first one is finished.

10

VARIOUS METHODS

There are several main forms of restaurant service from simple "plated" meals *(i.e.* food portioned directly on to the plates in the kitchen or servery) to elaborate forms of gueridon service.

The principal types of service may, however, be adapted simplified or elaborated to conform with the "house style" of a restaurant. Moreover, names given to various forms of service tend to differ from one country to another. However, the chief modes as understood in Europe may be summarised as :

French Service : The fundamental element of true French service (which of course, emanates from France) is that it gives guests, the opportunity to help themselves to the dishes. Refinements or simplifications depend on the grade of restaurant.

For small parties upto 3 guests, dishes are placed directly on to the table. The main dish is positioned before the guest expected to be served first. The plates are placed conveniently near the dish. For larger parties, a table of 4 or more, a gueridon or sidetable is used. In this case, the waiter brings plates and dishes to the gueridon, sets the plates at the guest's covers and then presents the dish to the guests to the help themselves.

Often, of course, some preliminary portioning or carving may be required from the gueridon.

Note : It is interesting to note that though this is called French service in France, Switzerland and elsewhere, some British people think that the custom of guests helping themselves from offered dishes typifies an English form of service because this style survives in private houses in the country where dishes are passed by the Butler.

English Ways

This form of service originated in the English tradition of the "Master" of family head carving or portioning and serving all at the table. In the English service restaurants, the waiter fulfils this role, *i.e.* the fundamental element is that he serves and at the same time, in effect, decides the portion for the guest. Again, refinements or simplifications depend on the grade of restaurant. Generally the English service is also a "Silver Service" with the portion size largely effected in the kitchen so that food, particularly when it involves a varied or complicated garnish may be easily separated and served by the waiter. The waiter brings plates and dishes to the side board, places a plate before each guest at his own cover, presents the main dish to the host or guests and then passes round the table serving each customer.

This form of service, can also be effected from the gueridon. In this case, the waiter places the dishes (a lamp or rechaud is needed—at least for the main dishes) with the required number of plates on the gueridon. He serves by completing one plate at a time which is immediately placed before the guest. Gueridon service is greatly facilitated by the use of an assistant waiter to aid in passing the completed plates.

Russian Ways

The basic element in the Russian service derives from the old Russian style of having large joints, whole fish or birds, often decoratively placed on dishes with elaborate garnishes, on the

sideboard visible to guests before being served. This was then placed or passed for guests to help themselves as in the French service. This enjoyed slight popularity in Europe from the early 19th century but it's element of display and garnish became integrated into the two other forms of service—perhaps particularly the English service.

It survives today only in the sense that in the English or French service from the gueridon, it is still common place for whole birds (poultry or game), meat joints and fish (Sole, Turbot) to be presented whole in large platters for carving from the gueridon. Otherwise the Russian Service as a distinct and separate form of service no longer remains.

American Ways

Fundamentally, this simplified form of service evolved in recent years. The American Service involves pre-plating and the pre-setting of tables with silver needed througout the meal. Plated food is brought by waiters from the kitchen on a tray which is then placed before the guest. The American service may be slightly elaborated by fine table equipment and by ancillary serving procedures such as dispensing by separate waiters of hot rolls and trolley or "cart" service for salads and so on.

Plate Service : This means that the customer is served in the simplest manner with food already placed on the plate. This kind of service is used in canteens, many boarding houses and restaurants, where Silver Service cannot be given. Service is much faster and calls for fewer staff.

All these above forms of service, and variants, are conditioned by general rules of serving. The above classification are intended merely to outline their basic forms.

In high-class restaurants, the brigade of waiters are organised on the basic idea that one waiter (the "chef de rang" or station waiter) is in charge of four, five, six or more tables with the

assistance from one or more “commis”. This is fundamental to carrying out any silver service, English or French style from the gueridon. The commis who brings dishes from the kitchen and the chef de rang attends to the finer points of actual service to the guest.

Basic Forms and Techniques of Major Types of Silver Service: The waiting procedures used in silver service, indeed, in all forms of good waiting. Relates to whether plate placing, service or clearance should be from the right or left.

Clean plates are placed from the guest’s left place, coffee cups and saucers (with underplate) from the guest’s right.

Food is served from the guest’s left and dirties cleared from the right hand side.

Drinks (including wines, and coffee) are served from the guest’s right. All used items *i.e.* plates, cups and glasses are cleared from the right. The above conforms with conventional styles observed in most establishments in Europe, particularly France and Switzerland and is the basis of teaching in most Continental hotel schools.

It is stressed that rules or customs of the house as determined by the restaurateur or maitre d’hotel should be followed. Either right hand or left hand clearance may be regarded as correct. Guidance which follows should, therefore, be interpreted and conditioned always by the application of the “house” rule of any particular restaurant as to which side of clearance should be adopted. What can emphatically be said is that once a decision is taken the observance of it should be total.

There should never be a mixture of right or left hand clearance in any one restaurant (except when, as the text below indicates, guests’ convenience is involved). This means, for example, that a waiter must not interrupt a conversation in order to do his service or force his way between the wall and the back of the customers’ chair. Coffee like other beverages, is served from the right.

Gueridon/Cart/Trolley Service

(i) Food is brought in raw or semi-prepared state and the cooking is finished in front of the guest.

(ii) Service is most elaborate and offers greatest personal attention.

(iii) Food preparation is done by Maitre d'hotel, and he is assisted by the Chef de Rang or Commis de Rang.

(iv) The person who performs gueridon service should be highly skilled. Characteristics of Gueridon Service :

1. Gueridon service is characterized by a cart/trolly at the tableside as well as quality, personalized professional attention and service.
2. There is low turnover, because menu items are priced high.
3. More service personnel are required for minimum covers.
4. Service is done from the right hand side as it is pre-plated.

Advantages of Gueridon Service

1. If a market survey indicator that the restaurant can attract elite clientele then gueridon service would be the best to employ.
2. Kitchen staff can be reduced—Service personnel increased.

Disadvantages of Gueridon Service

1. It requires highly skilled staff.
2. A lot of equipment is required, therefore expenditure required to maintain this type of service is high.
3. An extensive training programme is required to be planned and maintained.

4. Area required per person is 18-20 sq. feet.
5. More space is required for rolling the cart.
6. There is less turnover, because items are highly priced.
7. Cooking in the dining area may leave an odour.

Buffet Service

(i) The guest helps himself from the buffet table. The buffet displays food on the table.
(ii) Buffet are effective sales tool.
(iii) There is less service personnel required.
(iv) A constant watch has to be kept on the buffet table to make the buffet look appetizing at all the times.

Banquet Service

(i) Number of covers known in advance which makes scheduling easier.
(ii) There is a lot of choice since the menu is elaborate.
(iii) More area per person is required.
(iv) More equipment is required.
(v) Staff requirement is also more.

GIVING TIPS AND SERVICE CHARGES

According to the Oxford dictionary, *tip means a small present of money given to an inferior.* According to another dictionary it means *a small present of money given directly to someone performing a service or task.* This practice of tipping was in existence for a very long time and it became more popular in industries like hotels and restaurants. Tipping has become an almost recognised practice by the customers who tip the service staff and also by the service staff who expect this from the customers.

In the beginning, the idea of giving and receiving tips suited both customers who used to tip happily because they received

some extra attention in the shape of prompt, courteous and efficient service. The waiters were encouraged and gratified for the extra hard work they put in. Unfortunately the system of tipping deteriorated due to various reasons.

It gave an excuse to the management to reduce the pay of the service staff. The management thought that they got enough by way of tips. Service staff started categorising the customers according to their pockets, according to their paying capacity and not according to their buying capacity. Accordingly, the service changed and the customers were completely at their mercy and this went against the interests of the organisation. Tipping also encouraged illegal gratification by way of extra helpings charging less etc. Thus this system has unfortunately become a necessary evil. It also is unaccounted income.

To overcome these difficulties, a new and better system of tipping known as "POINT SYSTEM" is being used. All the service personnel belonging to a particular section of the Food and Beverage Department like staff of a particular restaurant, staff of Banquet department or a Bar are allotted certain number of points per week depending upon the rank, experience and skills of the person. The highest number of points are normally allotted to the top man in the department, and the allotted points progressingly decrease to the lowest ranked person.

The tips received in the department are promptly deposited in a sealed and locked box daily, by all the concerned persons. At the end of each week the amount collected in the box is totalled up and the amount thus collected is divided by the total number of points in the department to know the point value. From the point value the total tip amount for each person in the department for that week is calculated and distributed. For example, if the total amount collected during a particular week is Rs. 10,000/- then the total number of points in the department are 100. Then the value of each point will amount to 10,000 divided by 100 = Rs. 100.

The kitchen staff are allotted a marginal share in the system. The system of course has its own problems. It is difficult to ensure that the staff is honestly depositing the complete amount of tips collected by them each time. Even if they are depositing, a certain amount of mistrust is always there among the service staff.

Thus flicking of tips causes bad relation amongst the staff affecting the overall work performance. The management of course takes all the precautions. A person may lose all his weeks tips if he is caught doing some dishonest work. Another disadvantage of the system is that the efficiency of a skilled waiter is not always rewarded proportionately.

This system is advantageous in the sense that it leads to regular attendance and reduces absenteeism to the minimum. The amount distributed thus becomes accounted income.

Another easier system is “group polling”. In this system, waiters of adjacent stations group together and pool together the tip amount and distribute it equally among themselves at the end of each day. The chances of flicking the tip money are less as each acts as a check on the other. This also ensures team spirit and helps in developing competitive attitudes which in turn increases the work efficiency.

The tipping system no matter what kind of tipping system one adopts, has many disadvantages. Some establishments specially public sector organisations have completely banned tipping and made it illegal to give or receive tips. Instead a new system of “Service Charges” is introduced. Under this system a separate service charge is charged to the customer and is shown in the bill and collected from the customer. This may vary from 12% to 15% of the total bill amount.

From this amount a fixed percentage is added to each individual staff member according to status, weekly, fortnightly or monthly. From the total amount of service charges collected

besides distributing to the service staff a certain percentage is usually allocated to cover the following :

1. Staff Welfare
2. Breakages
3. Persons other than waiting staff

This system ensures efficiency and helps in changing the attitudes of the waiter. He no longer expects tips at the end of the service. For the scheme to be a success, asking for and receiving tips by the service staff should be declared as a major misconduct and it should be clearly written on the menus and bills that no tips are to be paid as service charges are included in the bill.

Waiting Rules

Before the Guests Arrive :

1. Briefing by maitre d'hotel about the menu changes, the Specials, and the possible price changes before the doors are opened for the day, is very important. It is an absolute must for all concerned to report on duty earlier than the stipulated time so that the maitre d'hotel can check the appearance of the personnel as well as brief them on any points of service.
2. After getting the stations one should check that the cutlery, glasses and other table accompaniments are clean and shining. The tables should not wobble, and the chairs should be dusted and the general cleanliness of the dining hall should be good.
3. Sideboard should be complete and ready for service. On the sideboard all the preparatory sauces, oil and vinegar stand, sugar pots (with white sugar and brown sugar), water jugs, all plates to be used as underplates and saucers, service spoons and forks, extra cutlery, extra linen, coffee spoons, tooth pricks, flats and salvers should be there.

4. The menu of the day should be studied carefully and before offering it to the late customers, one heeds to ascertain from the kitchen what dishes are available on the menu. This will help avoid taking a wrong order. Before beginning the day, one should make sure that the interpretation of the dishes on the menu is clear and one knows the accompaniments that go with each dish. The cutlery to be used for the service of special dishes must be known also.
5. One should never stand in the dining room with arms folded but stand erect with the waiter's cloth hanging evenly on the left and right arm hanging by the side.

When the Guests Arrive

1. When the guest comes to the table, he should be received with a smile either from the hostess or maitre d'hotel or in a smaller establishment directly, they should be greeted pleasantly—"Good Morning", or "Good Afternoon" and made comfortable by drawing out their chairs especially the women guests. Parents should be helped in seating their babies on highchairs or if no highchairs are available then on an additional cushion placed on the chairs. Any wraps or parcels are to be checked in at the appropriate place. If one has a regular checking service, the claim check should be given to the guest.

   If the waiter on another station is busy or out of the dining room, one should assist with seating of guests at that station and should never stand with folded arms watching customers wander around without being greeted.
2. When the guests are comfortably seated, the menu is to be presented opened on the first page and placed them, from the left, directly in front of each guest. One

should not wave or flourish the menu. The glasses should be filled with iced water for each guest.

Taking the Order

1. After presenting the menu to the guest, one should stand away for a couple of minutes, to let the guest decide what he wants. The process should never be rushed. Then one should return graciously and courteously ask "May I take your order Sir/Madam, please ?" At this moment the most essential thing is to have a sharp pencil poised over a pad.
2. While taking the order one should not rest one's hands on the back of the chair, or lean too close to the customers. The best way is to stand erect to the left of the guest, bend forward slightly from the hips. This posture gives the impression that one is listening carefully. If one is not sure about something in the order it should be clarified with the guest immediately.
3. One must know thoroughly the time required to prepare certain dishes and misleading statements about the time that the particular dish takes to prepare, should not be made. If the guest is in hurry one should suggest some "Ready to serve" item and never a "Cooked to order" food item.
4. The complete order should be taken except dessert including, how the guest would like a particular dish. For *e.g.* if steaks are ordered, one should ask if it is to be made well done, medium or rare done.

General Rules for Services

1. If the table is laid for more persons than the actual number seated, the extra covers are to be cleared immediately.
2. Replacing any cutlery or removing it has to be done on a platter (large plate covered with a napkin).

3. While placing cutlery, or plates on the table one should move in a clockwise direction.
4. If any cutlery falls on the floor it is to be immediately replaced with a clean one from the sideboard to show that the same dirty piece has not been given. It is to be replaced with a clean one from the sideboard and then the one that has been dropped should be picked up.
5. The cutlery which is on the left hand side of cover is to be placed from the left and that on the right hand side should be placed from the right.
6. No crockery or cutlery should be handled with bare hands. A salver should be used. Passing of the plates is not to be done by bare hands as this is not thought to be hygienic in polite society. A waiter's cloth should be used.
7. The waiter should never put any item of cutlery on the customer's plate, the guest should be allowed the privilege to do so.
8. When about to serve the order, if the guest is reading a magazine or has his hands on the cover, one should very courteously say "Excuse me, Sir". The guest will realise that ready to serve the order and will accordingly adjust himself.
9. Before bringing the crockery or glassware from pantry it has to be checked to see that it is clean and also not chipped. To be on the safe side one should give it a vigorous rub from the bottom as well clean all traces of grime and dirt and the lips of the sauce bottles should be cleaned before passing them.
10. Hot dishes are to be served on hot plates and cold dishes on cold plates.
11. The glasses should be handled from the base and cups

from the handles and never from the brim because of hygienic reasons. For the same reason one should not handle knives from their blades, forks from their prongs and spoons from their "bowls". These pieces of cutlery should be handled from the handle.

Order of Service

In a mediocre eating place, the object appears to be, come what may, to get the food on the table. This is even true sometimes, of places serving excellent food to a better than average clientele but, where space, facilities, and time are limited and there is a large volume of business.

However, even under such circumstances, it is better if one follows as nearly as possible, a methodical procedure. In the long run, the service will be better, smoother and faster.

Following are the accepted procedures :

(a) *Banquet or Formal Groups :* Start with the guest of honour, then the person to the right of him and proceed counter-clockwise.

(b) *Medium-sized, Informal Groups :* Start with the eldest woman and serve counter clockwise.

(c) *Small Intimate Groups :* Serve the women first, then the men. Serve counter clockwise.

If there are no fixed house rules regarding order of service, the method which creates, in that particular atmosphere, the warmest feelings of hospitability should be used. Good judgement should be the guide.

13. Each person is to be served with bread, butter and cold water as often as he wants.

14. The food should be served in the proper sequence of the menu. Each course must be served on appropriate plates and with the appropriate cutlery. The cutlery to be used should either be already on the table or placed

on the cover, brought from the sideboard, just before the particular course is served.

15. All accompanying sauces, condiments and spices required should be served for the particular" course without the customer having to ask for it.
16. Glasses or cups, should not be filled to the brim.
17. When food is being served in a container, for *e.g.* icecream cups, juice glasses, consomme cups, soup plates, coffee cups etc., an appropriate underplate, for the container along with the accompanying saucer should be used.
18. The service of the food should be timed properly so that there is no time lag between the service of courses. A la carte service requires a certain amount of time, so the timings should be adjusted in such a manner that the guest does not have to wait in between courses.
19. When serving from an entree dish or deep dish always use an underflat. Large underflats for large oval dishes, small underflats for small oval dishes and salvers for round centre dishes. A flat under a flat should not be used.
20. All food items to be served from the left and beverages from the right. This rule is applicable when the space permits namely if the table is standing against a wall the service of food and beverages should be done from one slide only.
21. All cleaning is to be done from the right hand side except the side plate with knife which is to be cleared from left. After the service of coffee one should not clear the cups until the guests leave. After the service of coffee, one should go round with a salver, and with the permission of the guest clear the water glasses. Cleaning of plates is done by first plate technique which implies

the first plate to be used for taking all items of cutlery on it (knives inside forks and forks inside spoons) and the rest of the plates stacked one on top of the other on the pivot formed by the thumb, little finger and fore-finger. The butter dish along with the large plates used for the main course and also the cruet set in case no savoury is to be served, are to be cleared. After a certain course if one finds that the guest has not used any part of the cutlery required for it, it should be cleared it along with the dishes of that particular course. Also if the guest has through ignorance or by mistake used any wrong cutlery it should be replaced before the service of the next course begins.

22. The rules of the work study are to be used every movement. Like with each trip to the pantry taking back all that is not required any more and bring back anything that one can use for the next course.

23. Undoubtedly, service with a pleasant voice and a smile is likely to bring more customers and serve more food. One should never show signs of worry or strain on the face because it will spoil the charm of an otherwise well-prepared meal. Cheerfulness and smiling countenance of the service personnel would add to the taste of the food. This however, does not mean that one should stand at one's station and keep smiling at the customers. One should be friendly with the customer but not familiar.

24. If the table becomes crumbly with bread crumbs or small pieces of food fall on the table cloth, the crumbs are to removed by means of crumb scorp or a waiter's cloth folded into a pad, into a large plate at any convenient stage during the meal.

25. The check is to be presented face down or alternatively folded into half with the corner carrying the amount folded back to show the total only. The check must be

presented on a cash tray or a quarter plate from the left.

26. All tips should be acknowledged with a polite thanks. If the guest does not give any tip, a word of thanks with a smile is a must.
27. Finger bowls are passed with all dishes that the guest eats with his fingers.

When the Guest Leaves ?

When the guests are about to leave they should be helped especially the ladies by drawing out their chairs and wished "Good-night" and a polite "I hope you enjoyed your dinner Sir/ Madam".

Always Remember that one should :

1. Never place a knife smaller than the small knife on the cover.
2. Never place a knife larger than the large knife on the cover.
3. Never place a fork larger than the large fork on the cover.
4. Never place a fork smaller than the small fork on the cover.
5. Never place a spoon smaller than the dessert spoon on the cover.
6. Never place more than two steel blades including the side knife on the cover.

Procedure for Service of a Meal : The procedure for service to a guest from the moment he/she enter the restaurant until he/she leaves is listed in point form to make it easier to follow. This is a suggested order and it should be noted that this order may change and vary according to the establishment, the type of menu and service offered and the time available. It is generally accepted that as far as possible, the food is served from the left, alcoholic and non-alcoholic beverages are served

from the right and dirties are cleared from the right. The pre-plated food is served from the right, and it may depend upon the position of the table and the guests seated at the table. Also, side plates, being on the left hand side of the place setting or cover, can be more easily cleared from the left thus avoiding stretching in front of the guest.

Food and beverage staff should be on duty a few minutes before the service is due to commence in order :

(a) To check that the sideboards have all the equipment necessary for service.

(b) To check that the tables are laid correctly.

(c) To check the menu and have a full understanding of the dishes, methods of cooking, garnishes, the correct covers, accompaniments and mode of service.

(d) That allocation of stations and other duties be made, of those that are not already known.

(e) That the senior captain or captain can check that all the staff are dressed correctly in a clean and well-presented uniform.

When the guests arrive, the following procedures should take place :

1. Guests enter and are greeted by the hostess. She checks to see if they have a reservation. If not, she checks the availability of the table.
2. The chairs are drawn out for them to sit comfortably.
3. Parents with small children are helped by fetching a high chair at the table or raising the seat with extra cushions.
4. If the customer has a packet or article in hand, it should be placed on the vacant chair at the same table. 20. Trays.
5. The ladies should be helped while taking off their overcoats.

6. Senior Captain or Captain (sommelier) provides the wine list for choice of aperitif and takes the order.
7. Menus are presented to the guests and host.
8. Recognition of the host is very important.
9. Senior captain or captain takes order of the party through the host. He/she stands to the left of host and should be ready to offer suggestions and advice on the menu or translate any items if necessary.
10. Sommelier comes to the table to see if any wine is required with the meal, taking the order through the host. He/she should be able to advise suitable wines to accompany certain dishes.
11. The waiter changes covers where necessary for the service of the fast course. Accompaniments are placed on the table.
12. While taking the order one should not rest one’s hands on the back of the seat. One should not stand too near the customer, rather should stand slightly bent forward and listen carefully to the order if anything is not clear.
13. One must know the time required to prepare every dish. If the customer is in a hurry, some ready-to-serve items should be suggested, rather than cooked to order food.
14. One should obtain the complete order except sweet and coffee, including how the guest would like a particular dish like steaks.

Reception of Guests : The personal skills shown by the food and beverage staff go a long way towards selling an establishment and making a guest feel at home in a friendly and relaxed atmosphere. This aspect of service is very often neglected and all employers should impress this upon their staff at regular intervals. Great importance should be attached to customer contact. A pleasant welcome to a guest can gain a sale, a poor welcome can lose a sale. First impressions count.

Removal of Spare Covers : In many instances tables are reserved for parties of guests. When this happens, the party sometimes turns up with one guest less in the party than quoted when the original booking had been made. The waiter must then remove the spare cover laid on the table. Judgement must be used as to which cover he/she removes, a lot depending on the actual position of the table. It should be noted here however that all guests, where possible, should look into the room. The cover should be removed in the correct manner using a service salver. When this has been done the position of the other covers should be adjusted if necessary and the table accompaniments re-positioned.

Re-laying of Tables : It is very often the case in a busy restaurant or dining room that a number of tables have to be relaid in order to cope with the inflow of customers. Where this is the case, the table should firstly be completely cleared of all items, of equipment and then crumbed down. At this stage, if the tablecloth is a little soiled or grubby, a lip cloth should be placed over it. It can then be laid in the approved manner.

It is essential that this procedure be carried out as quickly as possible to ensure the maximum turnover of guests in the limited amount of time available for service. This allows for maximum sales, which in a well-run establishment means more profit.

Cleaning Checklist : The supervisor should ensure that all the cleaning up is completed and that it is done properly. Duties might include :

1. Cleaning the cold buffet to the larder, collecting and washing all carving knives, assisting generally in cleaning of the restaurant.
2. Collecting all linen, both clean and dirty. Checking that the correct quantity of each item of linen are returned. The serviettes should be tied in bundles of ten. All linen

should be placed in the linen basket and returned with the linen list to the linen room.

3. The hot plate, should be switched off.
4. Returning all the silver together with the tableware trolleys to the silverstore. Silver should be arranged and put away neatly as shown by the shelf tables.
5. Collecting all cruets and accompaniments, returning them to their correct storage place and where appropriate returning sauces etc. to their original containers.
6. Checking that all the sideboards are completely empty. Hot plates should be switched off and the dirty linen compartment emptied.
7. The bartop is to be cleaned, putting all the equipment away, washing and polishing used glasses. These should be put away in their correct storage place, removing all empty bottles, completing consumption and stock sheets, locking up.
8. Putting away all equipment that has been used, emptying all coffee pots and milk jugs, washing and putting away. All perishable materials should be put away in their correct storage place. The Still set and milk urns should be emptied, washed out and left standing with cold water in them.
9. Emptying and cleaning all trolleys and returning them to their appropriate places. Any unused food items from the trolleys should be returned to the appropriate department. Any silver used on the trolleys should be cleaned and returned to the silver room.

At the end of the 11 courses coffee is served.

Other Important Points

Preparation of the Restaurant before the restaurant service :

(i) The tables and chairs should be kept in their proper

with geometrical designs and has the strength of cotton and texture of linen.

(vi) Occasionally a decoration piece is placed on the table which may be a flower arrangement but the arrangement should have a low flower vase. A large flower arrangement in the vase prevents customers sitting opposite each other from conversing. Heavily scented flowers should never be used as they adversely affect the flavour, of the food.

(vii) Each cover should be well balanced and never be overcrowded with cutlery, crockery and glassware.

Covers : It is the space required on the table for laying cutlery, crockery and glassware for one person at the beginning of meal. Normally each cover requires 24" x 15" and 27" x 15" space for banquet covers.

Two opposite covers should be exactly opposite to each other namely the large knife should be in line of the large forks of the opposite cover. Only necessary cutlery for the meal should be placed. The order of laying the cutlery should be from outside to inside of the sequence in which they are to be used.

(viii) Knives and spoons are placed on the right hand side of the cover whereas forks are placed on the left hand side of the cover. Dessert spoons and forks for the sweet are placed on the top of the cover, spoons having its handle towards right and below the spoon, a fork having its handle towards the left. A side plate is placed on the extreme left hand side of the cover with a small knife or side knife. The cutting edge of all the knives should be towards the left hand side of the cover. The water tumbler is placed on the right hand side of the cover near the tip of the first knife. The butter dish should be placed on a quarter plate along with a butter spreader in the centre of the table. A napkin is placed in the centre

place according to the layout of the restaurant or according to the requirement of the day and the tables should not wobble.

(ii) The chairs, sideboards and trollies should be spotlessly cleaned.

(iii) Tables should be 30 inches from the ground and the chair seat should be 18 inches high from the ground *level.*

(iv) Table on which table cloth is to be used should be covered with baize cloth which is of a thick soft material like—velvet.

The advantages of the baize cloth are :

(a) It protects the table surface.

(b) It allows the table cloth to hang freely and firmly on the table surface.

(c) It reduces the noise of cutlery, crockery and glassware while placing them on the table.

(d) It protects the wrists and elbows of the customers from the sharp edges of the table.

(e) It protects the table cloth from getting torn by the sharp edges of the table.

(v) For square, round and rectangular table a square or rectangular cloth should be used. The length and width of the cloth should be 2 ft. extra from the table- top dimension. If a square tablecloth is to be used on a round table, the four corners of the table cloth should just brush the floor. The four corners of the tablecloth should be well-hemmed to give a neat tidy appearance. Spoilt, crumpled or torn cloth should never be used. When spreading a tablecloth one should make sure that the right side is on the top. Different types of cloth material used are cotton or linen. Damask is the best material for table linen. It is a mixture of cotton and linen,

of the cover or side plate but rarely in the water tumbler as this practice is unhygienic.

(ix) Salt and peppers cellars are placed between two or four covers.

(x) Crockery used in the restaurant should be spotlessly clean, glassware and cutlery well-polished. Chipped and cracked crockery and glassware should never be used.

(xi) While placing the plates and the glassware on the table see that the monogram (if any) is directly facing the customer.

(xii) The cutlery should be carried on a salver or on a large plate covered with a waiter's cloth or napkin. The cutlery should never carried in bare hands. Crockery should be handled with clean waiter's cloth and in no case should the waiter touch prongs, bowls of spoons, blades of knives. Glassware should be handled from the base and never from the brim. The plates should be covered with a waiter's cloth. Plates in the should not be carried on silver.

(xiii) Menu card should either be placed on the menu card stand or on the sideboard or on the menu cards holder placed on the table.

(xiv) The cutlery for Hors d'oeuvres fish knife and fish fork can be laid in advance on the cover or can be brought on the same plate which is used for the Hors d'oeuvres course. Generally this is done when there is a fish in the course as well.

(xv) All the cutlery, crockery should be placed approximately 1/4 to 1/2 inches away from the edges of the table.

Check List for Setting Table

1. —Check table for position in room.
2. —Check alignment and placing.

3. —Check table balance.
4. —Centre undercloth or base cloth.
5. —Tablecloth should face upwards and hems downward.
6. —Silver should be held from the base not by food contact area. The salver should be covered by a napkin or waiter's cloth.
7. —Glassware is to be handled by the stem.
8. —The opposite covers should face each other.
9. —The fork should be placed on left side and knife on the right hand side with the cutting edge facing towards left.

Side Board/Dummy Waiter : The Sideboard is also called the Dummy Waiter or Side Station or Service Console. The style and design of a sideboard varies from establishment to establishment. It depends upon :

(i) The style of service and menu offered.

(ii) The number of waiters/waitresses working from one sideboard.

(iii) The number of tables to be served from one sideboard.

(iv) The amount of equipment it is expected to hold.

It is essential that the sideboard is of minimum size and portable so that it may be moved, if necessary. If the sideboard is too large for its purpose, then it takes up space which could be used to seat more customers. The top should be of a heat resistant material which can be easily washed down. After service, the sideboard is either completely emptied out or restocked for the next service.

In some establishments, the waiters are responsible for their own equipments in their station. After service, they re-stock their sideboard and it is then locked. Where this system is carried out, the sideboard also carries its own stock of lines namely everything necessary to equip a particular waiter's station

or set of tables. The material used to make up sideboards should blend with rest of the decor.

The actual layout of a sideboard depends firstly on its construction—the number of shelves and drawers for tableware. Secondly, on the type of menu and service offered. Therefore, the layout in every establishment could very slightly be suited to the needs, style of service and presentation. It is suggested however that in each particular establishment, the sideboard be laid out in the same fashion. If this is done the staff gets used to looking for a certain item in a certain place and this facilitates speedy service.

1. Service spoon and forks
2. Sweet spoons and forks
3. Soup spoon, teaspoon
4. Fish knives and forks
5. Joint knives
6. Side knives
7. Fish plates
8. Sweet plates
9. Side plates
10. Coffee, sauces
11. Underflats
12. Service salver
13. Dirty linen
14. Check pad or service plate
15. Assorted condiments
16. Ashtrays
17. Waiter’s jug
18. Bread basket and butter
19. Hot plate
20. Trays